ENGINEERING NEWS-RECORD

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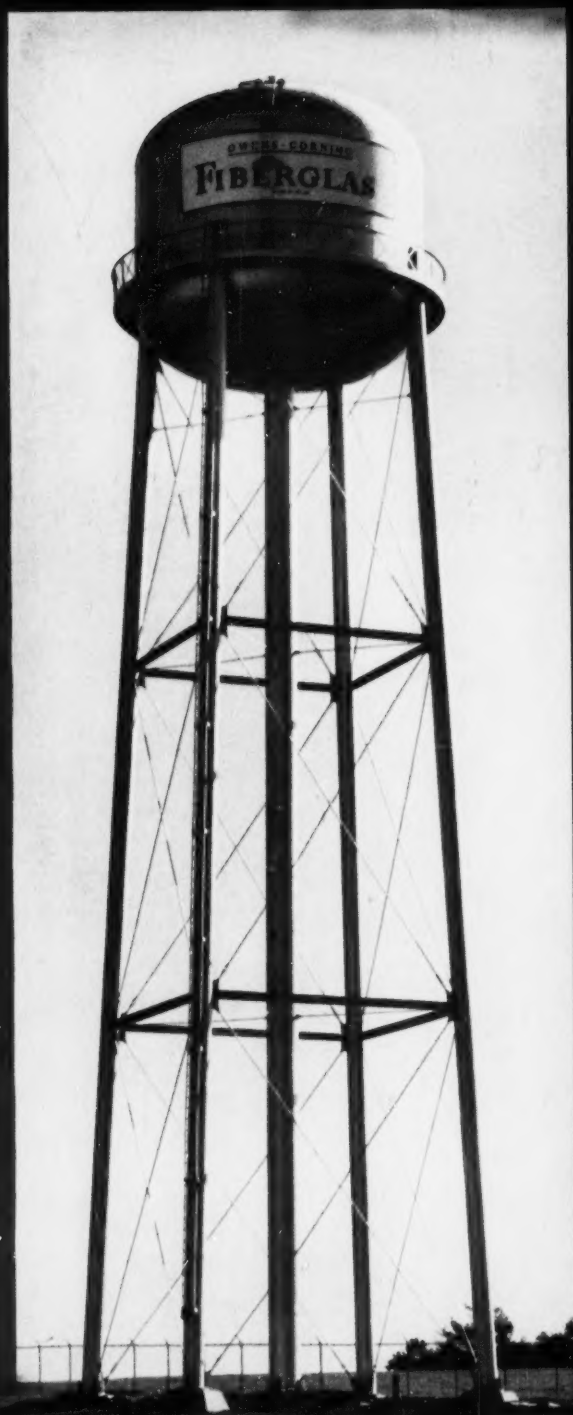
HORTON*
Tank Provides Fire Protection

at World's Largest Fibrous Glass Plant

The 100,000-gallon tee elevated tank illustrated at right was installed to provide the primary water supply for fire protection at the Owens-Corning Fiberglas plant at Anderson, South Carolina.

During erection of this tank, a Chicago Bridge & Iron Company Field Welding Supervisor was assigned to assist the Foreman in checking every aspect of the welding. This included inspection of welding equipment, checking welding techniques, cutting and grading test plugs and running any test called for in the governing specifications. Standard procedure on every welded structure built by Chicago Bridge & Iron Company . . . the service is provided at *no extra cost* to you!

*Trademark Registered in U. S. Patent Office.



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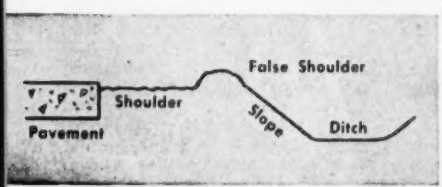
TELEGRAM

Mr. Public Official:

DO YOUR HIGHWAYS HAVE A SHOULDER PROBLEM THAT THREATENS SAFETY . . . CAUSES EXCESSIVE BREAKUPS OF YOUR PAVED ROADS? IF SO . . . HERE'S A PRACTICAL, ECONOMICAL METHOD FOR FIRST RE-SHAPING, THEN MAINTAINING THOSE SHOULDERS WITH ONE MACHINE, ONE OPERATOR.

THE PROBLEM

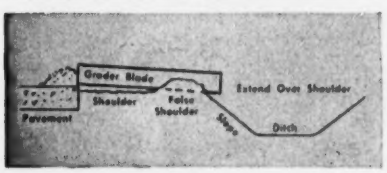


CROSS-SECTION of typical paved road with false shoulder that prevents proper drainage, encourages erosion of shoulder material and damage to pavement.

ACTUAL PHOTO of false shoulder, consisting of sod mat 3 to 4 inches high.

THE REMEDY

Cut off false shoulder with the Allis-Chalmers Model D's ROLL-AWAY moldboard—roll sod to edge of pavement.



Set grader moldboard as shown to insure clear cut and eliminate any obstacle to adequate drainage.

Windrow of sod consists mainly of root mat. Note that grader blade did not disturb or cut into shoulder gravel.

Load sod into truck with Model D's rear-end loader. Wide bucket lies flat on pavement, picks up cleanly without disturbing shoulder gravel.

Now slope shoulder with grader moldboard and feather windrow out behind with Shoulder Maintenance Blade.

The finished job—a smooth, safe, well-drained shoulder.

WITH false shoulder removed and proper shape re-established, the Allis-Chalmers Model D and rear-end loader with interchangeable Shoulder Maintenance Blade can *keep* the road in tip-top condition easily and at low cost. It's another money-saving application for the Model D, the most versatile of all motor graders. *For more information on shoulder maintenance, write now for Booklet MS-896,* or ask your Allis-Chalmers dealer for a demonstration.

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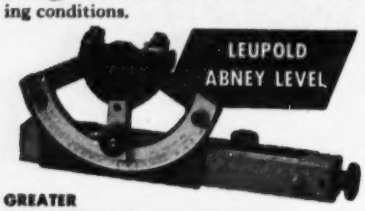

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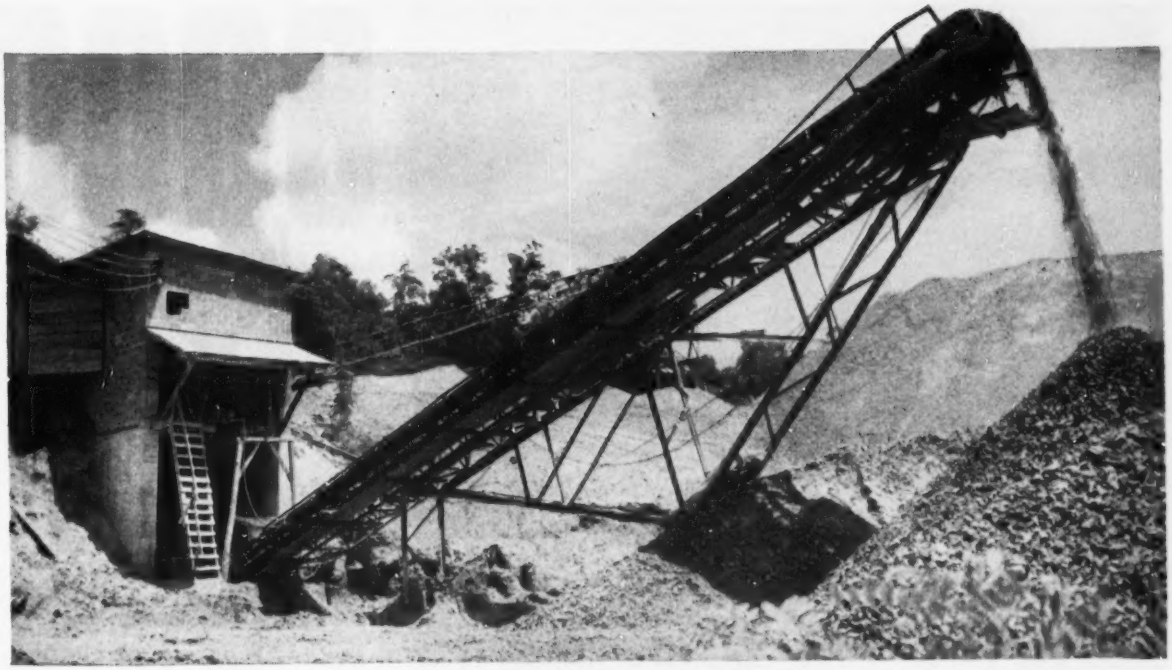

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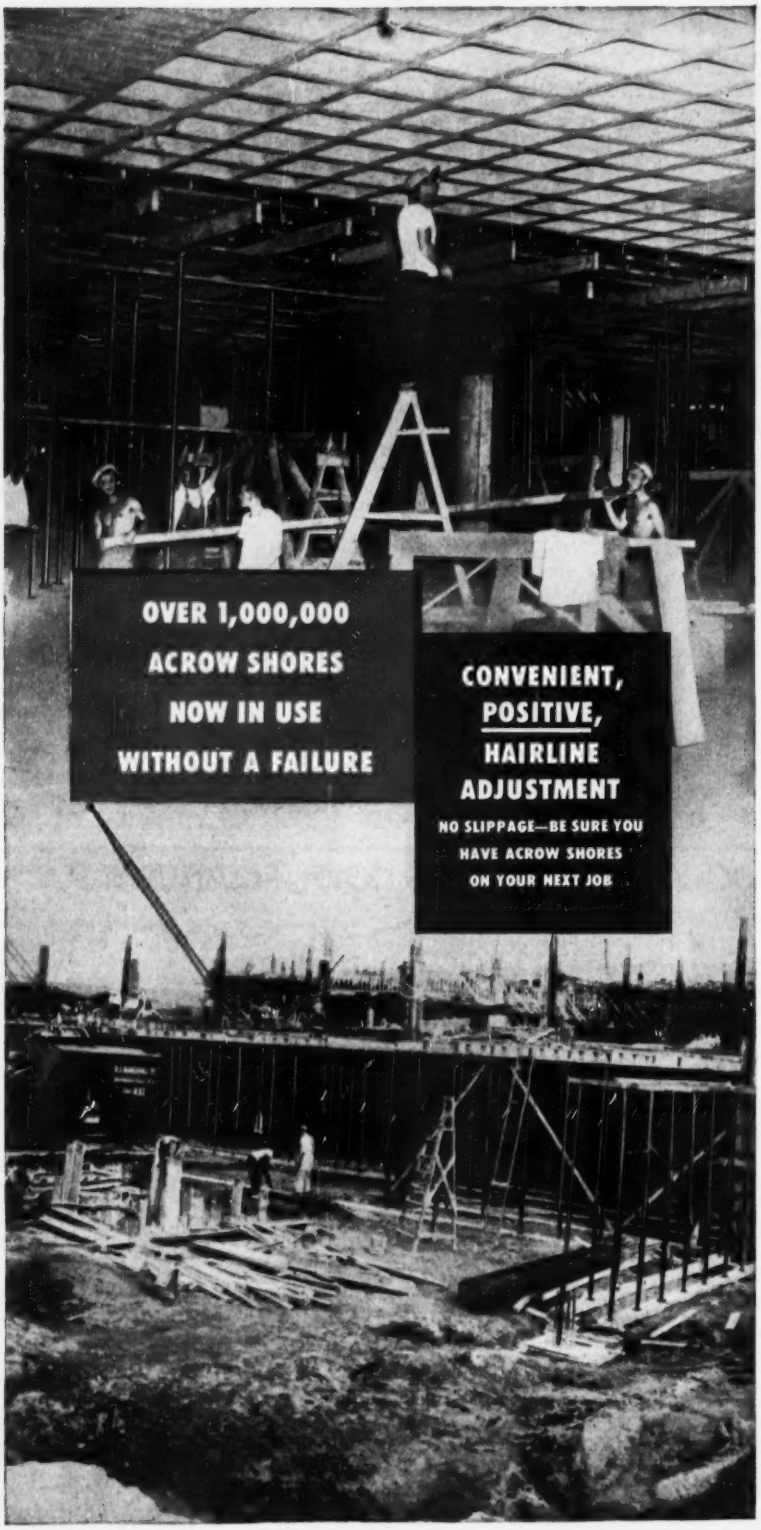

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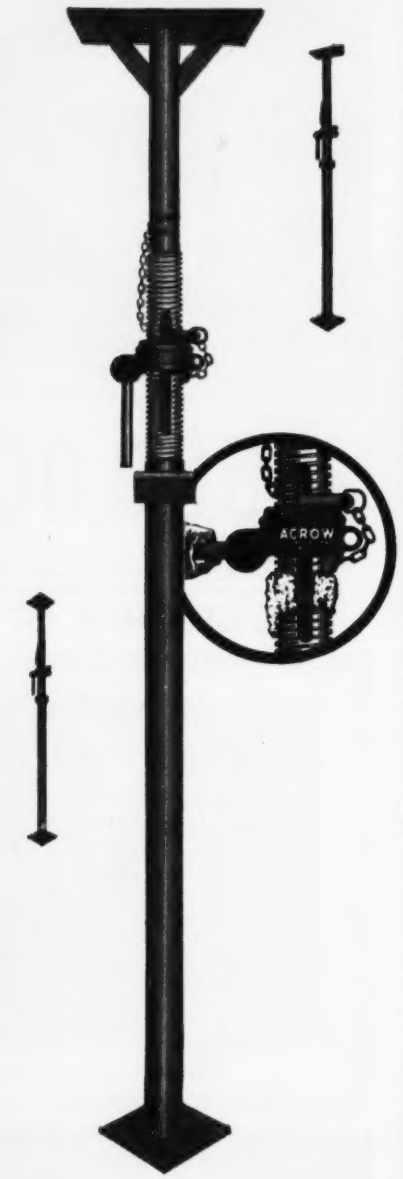

Photo shows Size 4 Acrow Shores being used 4' on center, extended to 14'6" under slab and steel pans.

ACROW SHORES used on "Pan" job

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Sordoni Construction Company of Wilkes-Barre, Pa., used over 8,000 Acrow Shores for erecting additions to the IBM Plant at Poughkeepsie, New York. No horizontal bracing was required because of the high loading capacity of Acrows. Acrows are quickly adaptable and highly recommended for any reinforced concrete slab system. For safe, sure support, specify Acrow adjustable Steel Shores.

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3	8 ft. 2½ in.	12 ft. 5½ in.	56	10.15 tons	7.55 tons	7490 lbs.	5600 lbs.
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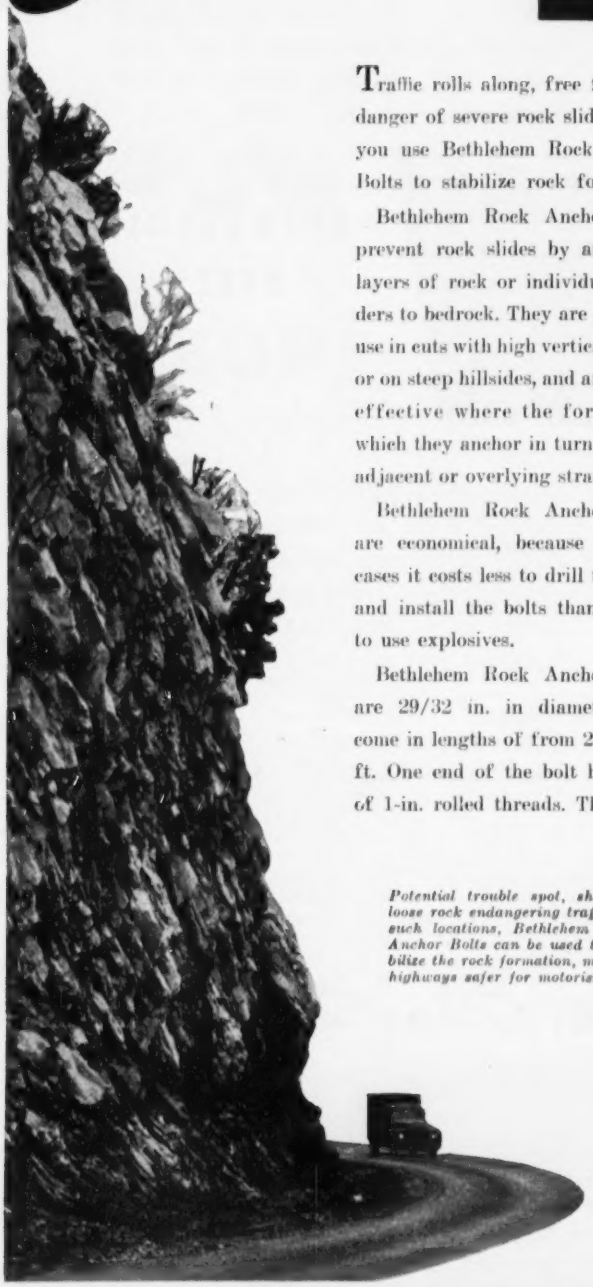
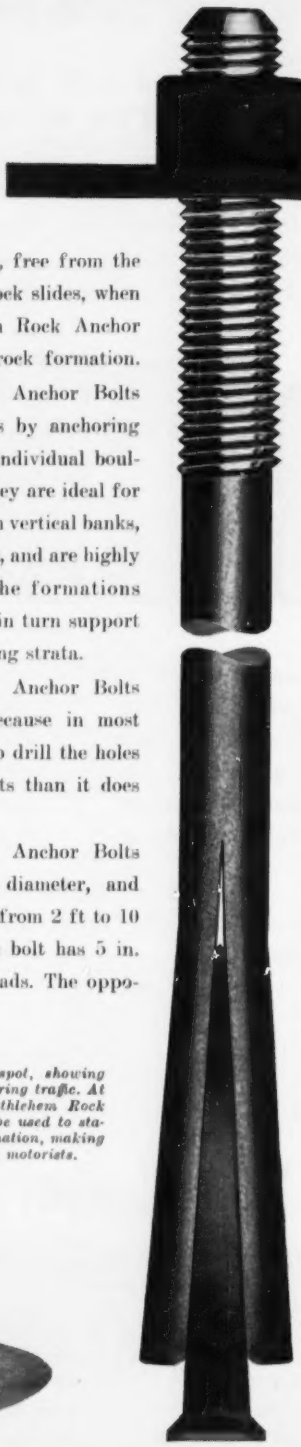
ROCK SLIDES CAN BE PREVENTED



Potential trouble spot, showing loose rock endangering traffic. At such locations, Bethlehem Rock Anchor Bolts can be used to stabilize the rock formation, making highways safer for motorists.



Traffic rolls along, free from the danger of severe rock slides, when you use Bethlehem Rock Anchor Bolts to stabilize rock formation.

Bethlehem Rock Anchor Bolts prevent rock slides by anchoring layers of rock or individual boulders to bedrock. They are ideal for use in cuts with high vertical banks, or on steep hillsides, and are highly effective where the formations which they anchor in turn support adjacent or overlying strata.

Bethlehem Rock Anchor Bolts are economical, because in most cases it costs less to drill the holes and install the bolts than it does to use explosives.

Bethlehem Rock Anchor Bolts are 29/32 in. in diameter, and come in lengths of from 2 ft to 10 ft. One end of the bolt has 5 in. of 1-in. rolled threads. The opposite end has a 6-in. slot, made by an exclusive forging process which forms the equivalent of two half-rounds. The slot accommodates a wedge which, forced deep into the slot when the back of the hole is reached, spreads the bolt-end to provide a tight fit. Installation can be handled with your present equipment.

Bethlehem Rock Anchor Bolts are furnished with an American Standard Square Nut. The bolts are placed horizontally or at an angle. They may be used in combination with rock anchor ties, plate washers, and angle washers.

If you have a particularly dangerous stretch of highway which you feel may call for rock anchor bolts, write to us at Bethlehem, Pa., telling us about it. We'll be pleased to study the rock condition, and offer recommendations.

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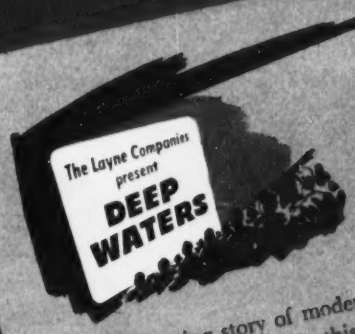

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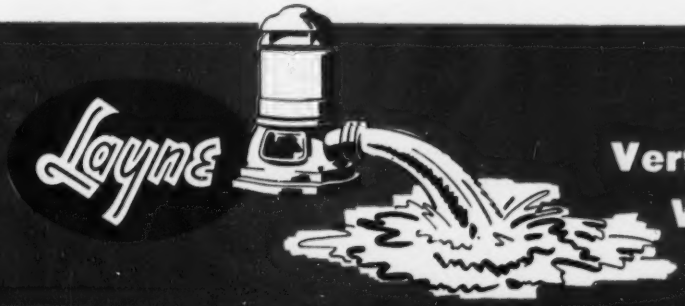

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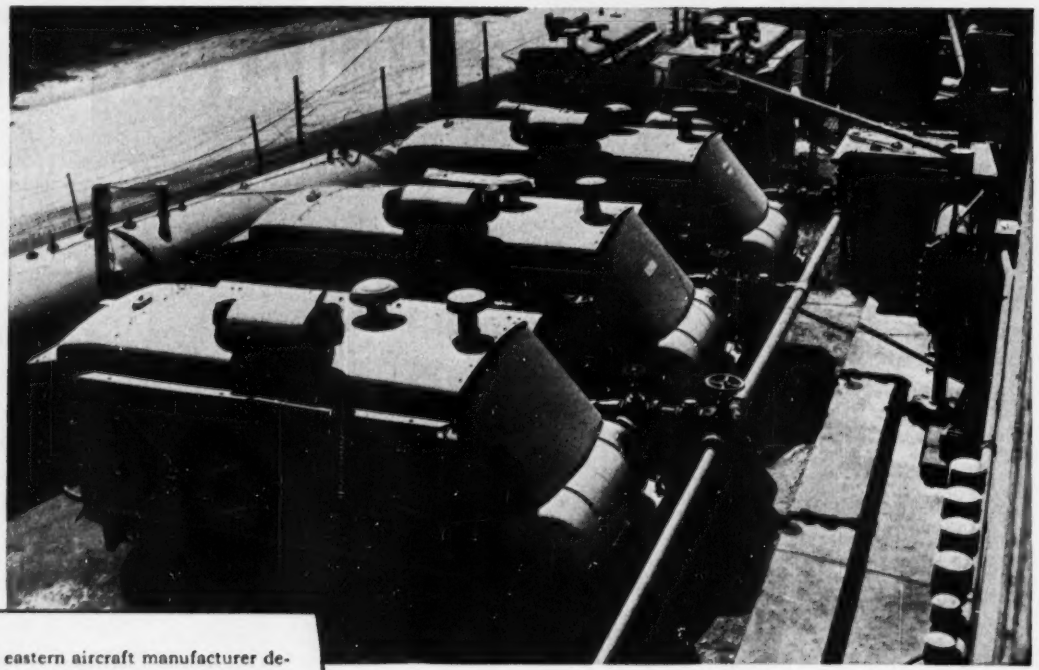

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And after 72 days of continuous production, these hammers were still going strong.

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72 days of continuous service compared to 30 with other hardfacing methods

THIS PROCEDURE SHEET GIVES COMPLETE DETAILS—THE AMSCO ELECTRODE TO USE AND METHOD OF APPLICATION. ALSO LISTS RECOMMENDATIONS FOR OTHER APPLICATIONS. 8 AMSCO WELDING RODS IN THIS FIELD. WRITE FOR YOUR FREE COPY.

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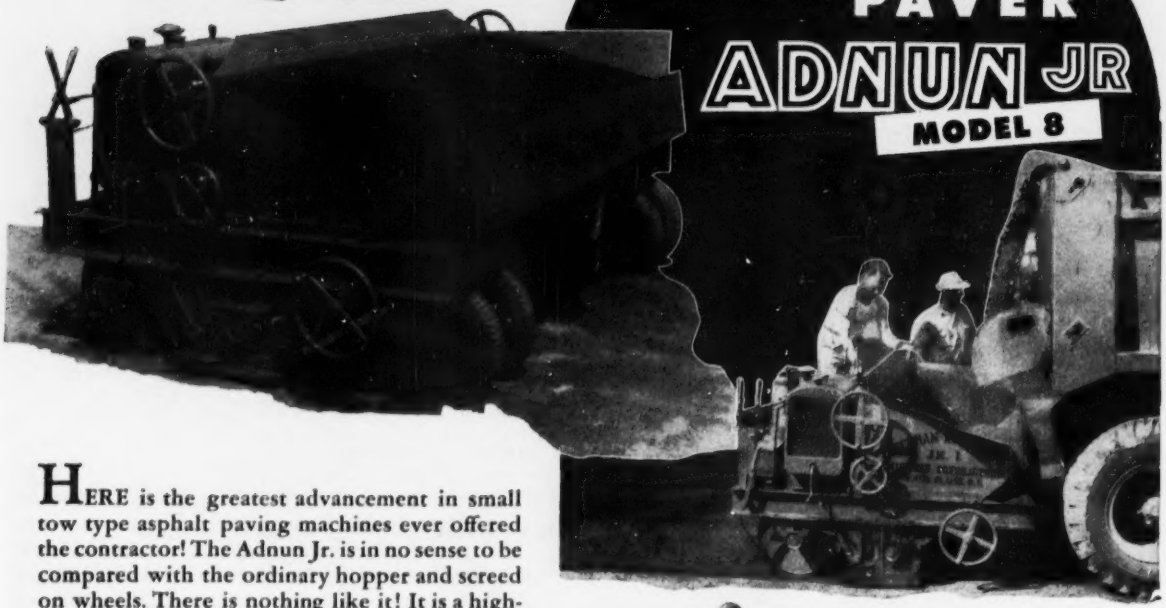
A NEW BLACK TOP PAVER

ADNUN JR MODEL 8



HERE is the greatest advancement in small tow type asphalt paving machines ever offered the contractor! The Adnun Jr. is in no sense to be compared with the ordinary hopper and screed on wheels. There is nothing like it! It is a highly engineered, quality, precision, paving tool.

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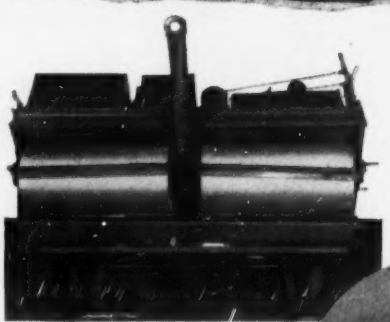
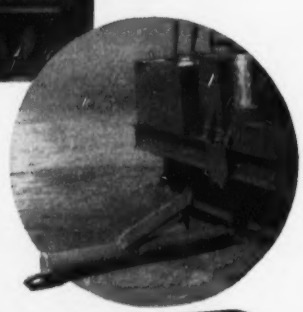
The smoothness of course surface approaches that of large highway machines due to the Adnun principle of Continuous Coarse Correction. This principle reduces surface error with each successive course.

Here is the answer to the parking lot, driveway, tennis court type of job. It does them more cheaply—does them faster—does a better job. There is a new bulletin! Let us send you one.



The underside of the Adnun Jr. Model 8 showing the Cutter Bar.



No trailer is needed for the Adnun Jr. The removable Trailer Hitch permits the Adnun Jr. to be lifted by the truck hoist and towed away.

ADNUN JR MODEL 8

BLACK TOP PAVER

BLAW-KNOX COMPANY
FOOTE CONSTRUCTION EQUIPMENT DIVISION
1922 State Street,
NUNDA, NEW YORK

BLAW-KNOX

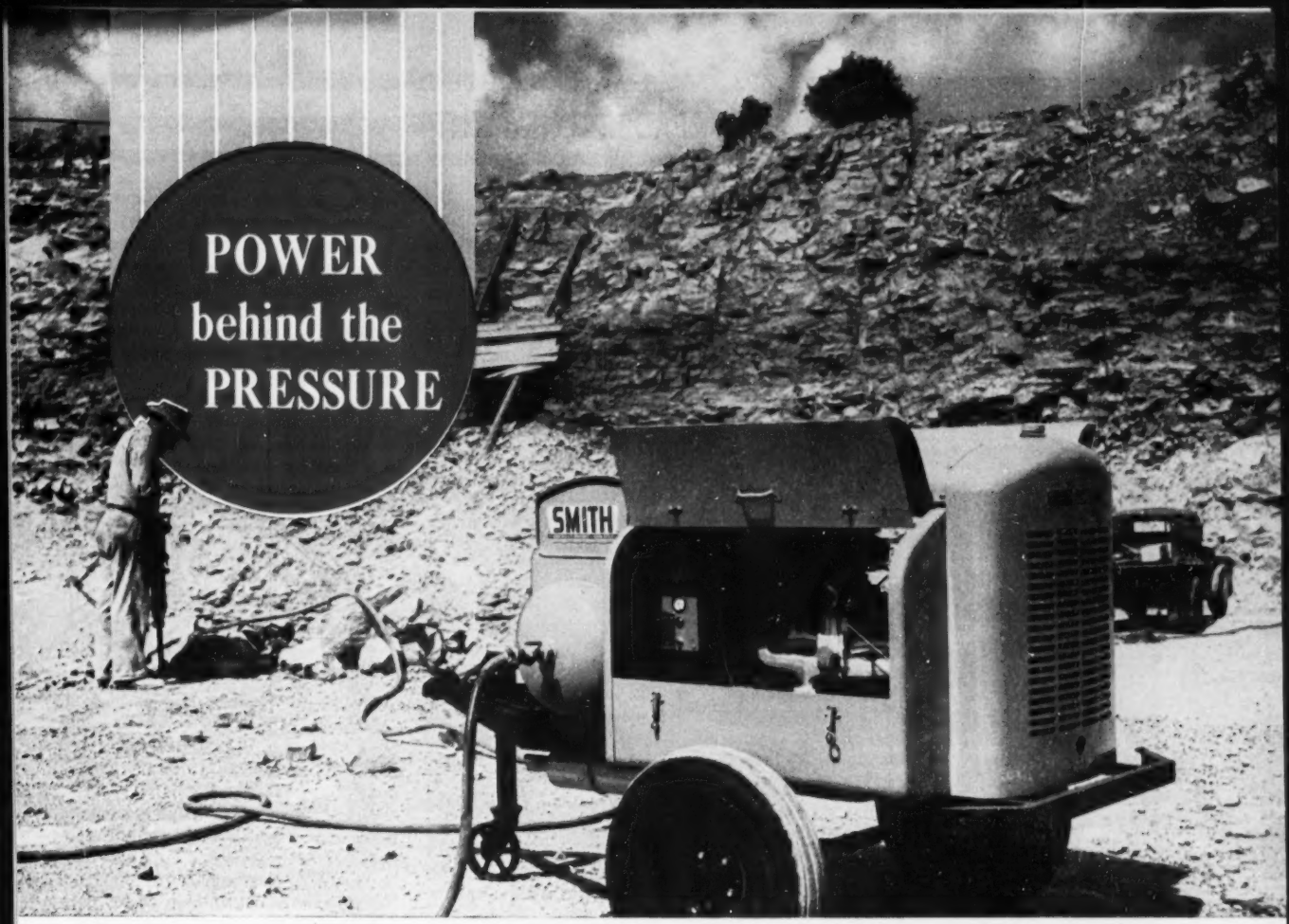
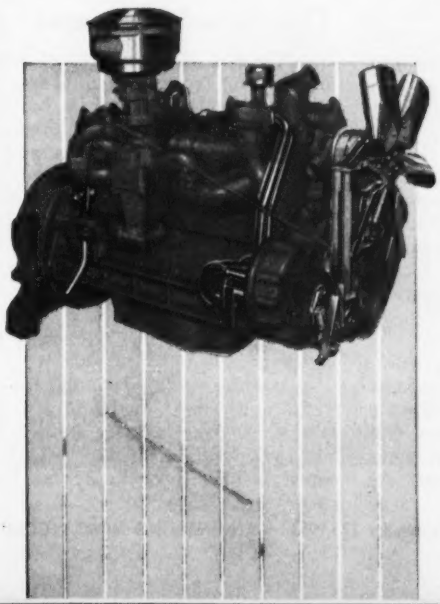


Photo courtesy Gordon Smith and Company, Bowling Green, Kentucky

air...120 cubic feet per minute...with Chrysler–modern industrial power



Here's Pedigreed Horsepower in another role . . . this time it's the Chrysler Industrial Model 22 Engine whose 413 cubic inches displacement is powering an air compressor. The air compressor, in turn, is operating a rock drill with which holes are being prepared for blasting. Fifty-five pound rock drills, two eighty pound paving breakers, two eighty pound sheeting drivers, four backfill tampers, two concrete vibrators . . . they're all "duck soup" to this Air Compressor.

The outstanding power to weight ratios of Chrysler Industrial Engines make them ideal power plants for light, compact, portable equipment like this Gordon Smith Air Compressor. The total weight of this entire unit is below the weight of the power plant alone in some air compressors.

Greater power per pound weight, longer service with less maintenance . . . these are important advantages of Chrysler Industrial Power. Another is your ability to select Chrysler Engines equipped to your needs *without* substantial increase in the unit costs of engines. That's because Chrysler production-line methods adapted to specialized industrial engine building, provide custom-built engines at mass-production prices.

Chrysler Industrial Engine sales and service facilities are nationwide. Let the nearest dealer show you what Chrysler Power can do for you, or write: *Dept. 79, Industrial Engine Division, Chrysler Corporation, Trenton, Michigan.*

CHRYSLER
Industrial Engines

HORSEPOWER WITH A PEDIGREE

Pressure-Creosoted Piles

● Approximately 139,400 linear feet of pressure-creosoted piles were used in the foundation of Breukelen Houses, a Federal Aid housing project constructed by the New York City Housing Authority.

Ten of the project's thirty apartment buildings were located on filled-in ground over old water courses. Pressure-creosoted piles were considered the most practicable type of foundation for these 6- and 7-story structures. Over 3,100 25-ton capacity piles, ranging in length from 27 to 64 feet, were used at a cost of $261,758.00 —a very reasonable cost for permanent piles.

The Breukelen project, covering a total area of 64.9 acres, will house 1,595 families. The Horn Construction Co., Inc., of New York City, was general contractor for foundations. The piles were driven by I. B. Miller Contracting Corporation of Queens. Severud-Elstad-Krueger of New York City were structural engineering consultants.

Koppers Pressure-Creosoted Foundation Piles are considered permanent construction when cut off above the water table, and the tops saturated with creosote and capped in concrete. For information on price and delivery, please write to:

KOPPERS COMPANY, INC.
Wood Preserving Division
Pittsburgh 19, Pennsylvania

KOPPERS **PRESSURE-TREATED WOOD**

READER COMMENT

Highway award papers

SIR: I have studied the summaries of prize winning papers submitted in the General Motors Highway Award Contest and feel the same sense of frustration so ably expressed by N. R. Drulard (ENR July 30, p. 14).

As far as I can determine, there is not really one novel or different approach suggested by one of the winners, nor will the problem be solved by merely raising taxes.

It is truly often easier to criticize than offer construction suggestions but it is too bad that at least one of the winners did not propose that all left turns be eliminated in municipalities, and that trucks be compelled to pay for added costs, as Mr. Drulard suggests.

Inasmuch as ENR is obviously vitally interested in this problem may I suggest that you endeavor to tabulate some of the really novel and perhaps even the seemingly at present preposterous suggestions from some of the papers and publish them. The progress of our nation has often been forwarded by what was originally deemed impossible—as for example the Wright Brothers and the airplane, among others too numerous to mention. We certainly shall never solve the problem by merely raising taxes and spending just to make a big job bigger.

FRANK B. ROBB
Attorney at Law,
Cleveland, Ohio

Method not new in U. S.

SIR: In your June 25th issue, (p. 62) I read with some interest an article about 16-in. dia sand columns installed by stantard pile driving equipment using a 16-in. steel-casing inner core at Blythe, California.

While it is true that these sand piles have been used in Europe, the method described of placing them at Blythe is not new in the United States. In 1949, the MacArthur Concrete Pile Corp. had a contract for 1,187 16-in. dia sand drains for the New Jersey State Highway Department near Camden. We placed 400 of these drains or sand columns by the following method:

A 16-in. dia driving casing with a close-fitting interior core or mandrel (which in combination are known as "forming apparatus") was used. The bottom of the apparatus was sealed with a flat pressed steel boot. Apparatus was driven to a predetermined bottom elevation with a heavy steam hammer; core withdrawn; casing filled with sand; core placed on the top of the sand, and under a pressure of seven tons, the sand was compressed into place as casing was withdrawn.

We gave considerable study to the moisture content of the sand and found the best results were obtained with sand almost free of any moisture at all. While the sand columns were not used for load bearing but to act as drains or wicks, they were formed by the MacArthur Standard Compression Method.

R. E. TALMADGE
President
MacArthur Concrete Pile Corp.
New York, N. Y

Likes lagoon idea

SIR: Sewage Lagoons, by William J. Wenzel (ENR Aug 20, p. 48) was a treat to read and practical in its application as it follows a simple natural cycle.

Many large users of process-water have access to land where an economical method of reclamation and re-use would be efficient, using Mother Nature's own continuous cycle, rainfall—percolation and evaporation. Our streams would be much cleaner and the vast underground network which depends on replenishment from above would benefit considerably by simple filtration.

Mr. Wenzel's article is far reaching. Let us have more like it by others in the field.

AUGUST F. VORNDRAN, JR.
Water Supply Consultant
Webster, N. Y

Code formula questioned

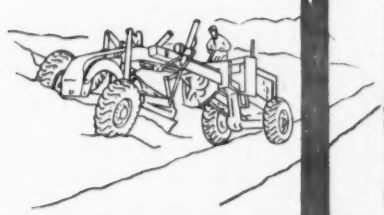
SIR: Control of the spacing of lateral bracing for compression flanges of steel girders is achieved by building codes with the following requirement:

Compressive unit stress in pounds per square inch shall not exceed 20,000 when ld/bt does not exceed 600, nor the value obtained by dividing 12,000,000 by ld/bt when ld/bt exceeds 600. Here, l is the distance between braces, d the depth of girder, b the flange width, and t the average flange thickness, thus, bt equals the flange area.

According to this formula, the resistance to lateral buckling of a narrow, thick flange, a wide, thin flange and a lip-stiffened flange would be equal. This is obviously far from

all-wheel drive*... teamed with ... all-wheel steer*

gives you controlled traction*



* only AUSTIN-WESTERN has it

front drivers **PULL**

rear drivers **PUSH**

Whenever you see the grader in an offset position, as in the illustrations on this page, you can be sure that it is moving more material farther and faster than any other grader can do it.

"Controlled Traction" is the reason—and controlled traction is possible only in a grader with the directional control of All-Wheel Steer, plus the "push-pull-power" of All-Wheel Drive.

By offsetting the machine, the operator can put front and rear wheels where traction is best, can eliminate all side-thrust at the toe of the blade (which can be utilized to its entire length), and can balance the whole power of the grader against the load.

Austin-Western

Power Graders • Motor Sweepers
Road Rollers • Hydraulic Cranes

BALDWIN BLH LIMA-HAMILTON

Construction Equipment Division

Manufactured by
AUSTIN-WESTERN COMPANY
Subsidiary of Baldwin-Lima-Hamilton Corporation
AURORA, ILLINOIS, U.S.A.

Mack comes in

costs go down

It happens all the time. A truck user finds that heavy loads, rigorous weather, or tough terrain are proving too much for the trucks he owns. Frequent breakdowns . . . interrupted output . . . excessive repairs—all conspire to boost his costs and cut his profit margin. Then—if he's smart—he switches to Mack six-wheelers.

And that's where he gets a real eye-opener. Because even under the most adverse hauling conditions—hub-deep mud, slippery sand or pitted rock-strewn ground—his Mack six-wheelers keep the big loads moving on dependable, time-saving, cost-cutting schedule.

The reason why? It's found in Mack's Balanced Bogie with exclusive Power Divider that assures positive traction no matter how tough the going. Acting normally as a true differential the Mack Power Divider delivers torque between the two bogie axles in proportion to wheel traction, thus eliminating useless wheel slippage and spinning.

Mack's Balanced Bogie and Power Divider combine with numerous other outstanding Mack features to give you the power, strength, traction and easy maintenance you need to handle the biggest loads—with greater profit to you. Your nearest Mack branch or distributor will gladly give you all the facts.

. . . outlast them all

Mack Trucks, Empire State Building, New York 1, N. Y. Factory branches and distributors in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

A. Muratore Contracting Co., Brooklyn, N. Y., is typical of numerous contractors who switch to Macks and find they're the answer to lower-cost operation.

READER COMMENT

true. A logical formula would substitute for *bt* the transverse moment of inertia of the flange, with the necessary change in the constant 600.

The *ld/bt* criterion was probably intended only for use with rolled I-beams. The codes, however, make it applicable to any builtup section.

RALPH W. STEWART
Los Angeles, Calif.

[EDITOR'S NOTE—The criterion was developed for rolled beams, but it is on the safe side for ordinary plate girders. This criticism has been voiced before, and a project committee of the Column Research Council is investigating this buckling problem.]

CALENDAR

National highway conference of county officials, American Road Builders Association, Lake Delton, Wis., Sept. 24-25.

National Electrical Industries Show, 69th Regiment Armory, New York City, Sept. 29-Oct. 2.

Southeastern Association of State Highway Officials, annual meeting, Asheville, N. C., Sept. 30-Oct. 3.

Conference on Radiant Heating, Department of Architecture, Pratt Institute, Brooklyn, N. Y., Tuesday evenings, 7:30 to 9:30 p.m., October-November.

Western Association of State Highway Officials, Hotel La Fonda, Santa Fe, New Mexico, Oct. 7-10.

National conference on industrial hydraulics, Graduate School and Armour Research Foundation, Illinois Institute of Technology, Hotel Sheraton, Chicago, Oct. 8-9.

Structural Engineers Association of California, The Ahwahnee, Yosemite National Park, Oct. 8-10.

National Conference of Industrial Hydraulics, Hotel Sheraton, Chicago, Oct. 8-9.

American Concrete Pressure Pipe Association, convention and meeting, Ponte Vedra Inn, Ponte Vedra, Fla., Oct. 8-10.

Concrete Reinforcing Steel Institute, semi-annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va., Oct. 12-17.

Federation of Sewage and Industrial Wastes Associations, Municipal Auditorium, Miami, Fla., Oct. 13-16.

National Reclamation Association, Mapes Hotel, Reno, Nev., Oct. 14-16.

Engineers Council for Professional Development, Hotel Statler, New York City, Oct. 14-17.

American Society of Civil Engineers, annual meeting, Hotel Statler, New York City, Oct. 19-23.

Excessive noise symposium, Armour Research Foundation, Illinois Institute of Technology, Chicago, Oct. 23-24.

Society of American Military Engineers, semi-annual convention, George Washington Hotel, Jacksonville, Fla., Oct. 25-26.

American Public Works Association, annual public works congress and equipment how, Roosevelt Hotel and Municipal Auditorium, New Orleans, La., Oct. 26-29.

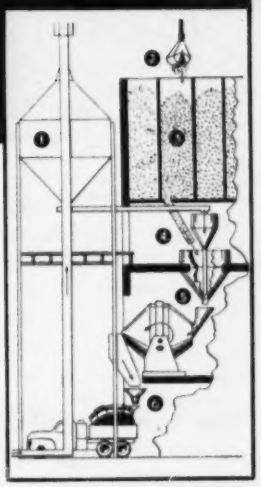
California Section, American Water Works Association, Palace Hotel, San Francisco, Calif., Oct. 27-30.

American Concrete Institute, Southwestern regional meeting, Rice Hotel, Houston, Tex., Oct. 29-30.

National Council of State Boards of Engineering Examiners, annual meeting, Plaza Hotel, San Antonio, Tex., Oct. 29-31.

Fourth annual conference on coastal engineering, Council for Wave Research, Del Prado Hotel, Chicago, Ill., Oct. 29-31.

World's Largest Concrete Mixer



1. Cement storage silo
2. American Stiffleg Derrick places
3. Aggregates in bunkers
4. Mixing controls
5. Tilting mixer
6. Concrete loaded into truck mixers

...makes 12 tons in 90 seconds!

That's the production schedule set by Diethers, Ltd., Vancouver, Can., to supply the growing building boom in British Columbia.

And to maintain this 480-ton-an-hour output, Diethers had to be assured of a fast, continuous flow of aggregate from barge to mixer.

They have the answer in their dependable American Stiffleg Derrick. Powered by an American Model 140 Hoist, the rail mounted derrick quickly transfers materials from barges to bunkers high atop the mixer—7 tons at a time!

The speed and power needed for this operation is typical of equipment designed and built by American Hoist. In your business, too, you will find that the ability of American products to take the most difficult job in stride is *built in.*

Mail the coupon today for your copy of the American Crosby Clipper, the magazine that gives you interesting, factual, on-the-job stories.

American Hoist
and DERRICK COMPANY

American Hoist & Derrick Company
St. Paul 1, Minnesota
Yes, I'd like to get the American CROSBY CLIPPER.
Also, send information on the following equipment:
— Hoists — Derricks — Cranes — Portable Elevators
— Wire Rope Clips

Name_____ Title_____
Firm_____
Address_____
City_____ Zone____ State_____

Send coupon today!

JENKINS PRACTICAL PIPING LAYOUTS

68

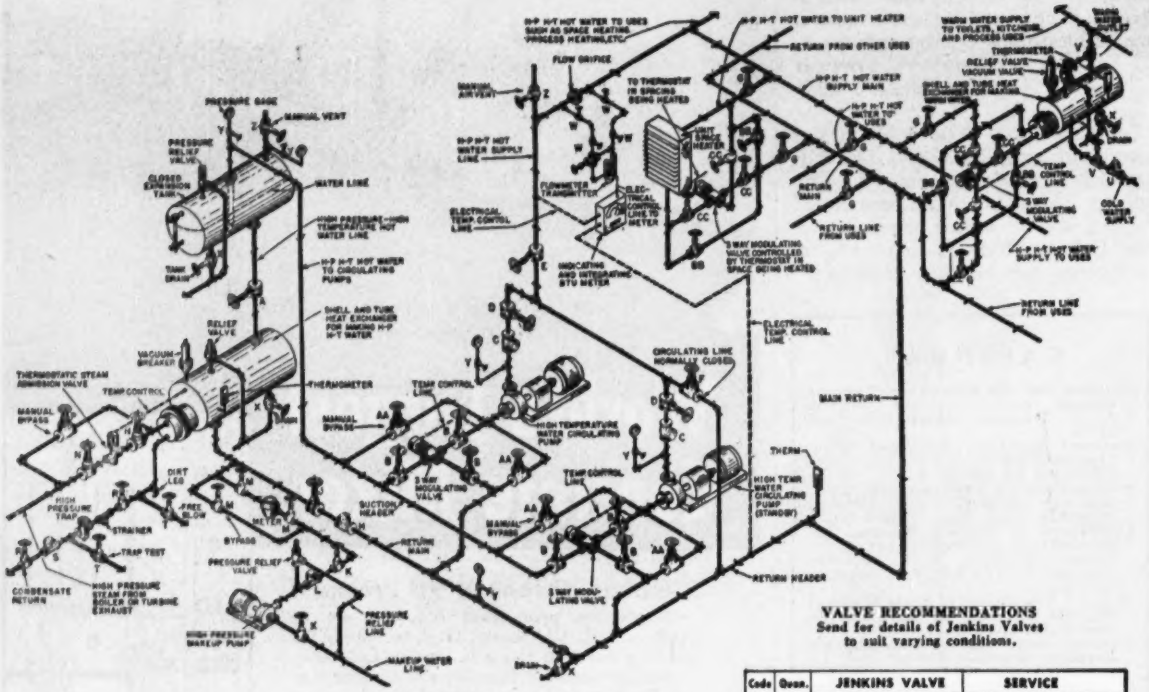


Diagram by Huxley Madeheim, Consulting Engineer
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VALVE RECOMMENDATIONS
Send for details of Jenkins Valves to suit varying conditions.

Code	Quan.	JENKINS VALVE	SERVICE
A	1	Fig. 204 IBBM Gate	HP-HT Hot Water Shutoff
B	6	Fig. 204 IBBM Gate	3 Way Valve Shutoff
C	2	Fig. 339-R IBBM Swing Check	Prevent Backflow
D	2	Fig. 204 IBBM Gate	Pump Discharge Shutoff
E	1	Fig. 204 IBBM Gate	Supply Line Shutoff
F	1	Fig. 923 IBBM Globe	Circulating Line Shutoff
G	6	Fig. 280 Bronze Gate	Branch Shutoffs
H	1	Fig. 339-R IBBM Swing Check	Prevent Backflow
J	1	Fig. 204 IBBM Gate	Return Main Shutoff
K	2	Fig. 280-U Bronze Gate	Makeup Pump Shutoff
L	1	Fig. 962 Bronze Swing Check	Prevent Backflow
M	3	Fig. 280 Bronze Gate	Makeup Meter Shutoff
N	2	Fig. 1010 Cast Steel Gate	Thermostatic Valve Shutoff
P	1	Fig. 1042 Cast Steel Globe	ThermostaticValveBypass
R	2	Fig. 280-UN Bronze Gate	Condensate Line Shutoff
S	1	Fig. 962 Bronze Swing Check	Prevent Condensate Backflow
T	2	Fig. 976-A Bronze Globe	Trap Test, Free Blow
U	1	Fig. 352 Bronze Swing Check	Prevent Backflow
V	2	Fig. 47-U Bronze Gate	Cold Water Shutoff
W	4	Fig. 703 Bronze Globe	Flow Meter Pressure Taps
X	4	Fig. 976-A Bronze Globe	Drain Lines
Y	5	Fig. 703 Bronze Globe	Pressure Gage Control
Z	2	Fig. 976-A Bronze Globe	Air Vents
AA	4	Fig. 923 IBBM Globe	3 Way Valve Bypass
BB	4	Fig. 976-A Bronze Globe	3 Way Valve Bypass
CC	6	Fig. 280 Bronze Gate	3 Way Valve Shutoff

How to plan a HIGH PRESSURE-HIGH TEMPERATURE HOT WATER PIPING SYSTEM

For efficient space and water heating — and for numerous processing needs as well — a high pressure-high temperature system offers several distinct advantages over a steam system.

Often operated at pressures up to 215 psi, with a corresponding temperature of 388°F, a HP-HT system of this type eliminates the need for pitch, drainage, or traps and provides a greater amount of heat transmission for a given pipe size. Moreover, it requires no feed-water treatment and, when used for processing services, eliminates large pressure drops due to sudden load conditions.

The hot water is generated in a shell and tube heat exchanger by means of high pressure steam from either turbine extraction or exhaust. Unit heaters on the HP-HT lines provide for space heating requirements and a shell and tube heat exchanger supplies warm water for lavatories, kitchens, and processing which requires moderate temperatures. When used with accumulators, this system eliminates the need for taking additional steam directly from the steam generating source and, thus, provides a better plant heat balance.

Consultation with accredited piping engineers and contractors is recommended when planning any major piping installation.

To save time, to simplify planning, to get all the advantages of Jenkins specialized valve engineering experience, select all the valves you need from the complete Jenkins line. It's your best assurance of *lowest cost in the long run.* Jenkins Bros., 100 Park Ave., New York 17.

Complete description and enlarged diagram of this layout free on request. Includes additional detailed information. Simply ask for Piping Layout No. 68.

JENKINS
LOOK FOR THE DIAMOND MARK
VALVES
Jenkins Bros

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THE CONSTRUCTION WEEK

- **Policy attack**—It wasn't only the Democrats—meeting in Chicago—who were lining up to fight the newly announced federal power policy (ENR Aug. 27, p. 23).

  On the Pacific Coast, the National Hell's Canyon Assn. reported it had engaged Oregon's maverick Senator Wayne Morse to make four speaking appearances this month "to discuss the Eisenhower Administration's power policy." NHCA—which advocates one large hydro dam in Hell's Canyon on the Snake River, as opposed to the Idaho Power Co.'s proposal for three smaller dams—expected Morse's series of talks (first: Boise, Idaho, Sept. 24) to attack the power policy.

  Moving on another front too, NHCA also plans a conference with Assistant Interior Secretary Fred G. Andahl and the Corps of Engineers "to explore possibility of partnership between the federal government and local interests" for development of the Columbia Basin, and to find out what legislation is planned to back the new power policy.

  And—possibly in a move to mollify vociferous Northwest groups—Interior Secretary McKay announced in Washington that the Bureau of Reclamation will "look into" water resources development possibilities of the lower Snake below the Hell's Canyon site.

- **Student facts**—New York's Cooper Union, surveying its June, 1953, graduates, discovered two not-too-startling facts: Nearly a fifth of the engineering graduates decided to continue studies in graduate schools; engineers received starting salaries averaging $360 per month—up 11% over last year's average.

- **Headquarters campaign**—Now that the news is out (ENR Sept. 3, p. 23) that the major engineering societies are shopping for bigger quarters, Pittsburghers are putting up a hard-driving campaign to snare the society headquarters for their fast-growing Gateway Center.

  Spearheaded by the Engineering Society of Western Pennsylvania, the Allegheny Conference and local industrialists, the drive has gone this far:

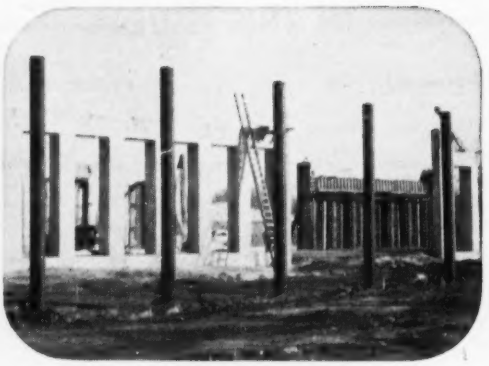
  They've met (Sept. 11) with the United Engineering Trustees; they've offered to build a $5-million, 14-20 story building in Gateway Center.

  Pittsburghers are conscious of another point: The present headquarters of the societies in New York was built under a grant of $1.5 million—from Pittsburgh's Andrew Carnegie.

- **Atomic thought**—There's future business in the continuing pressure from atomic energy experts for modification of security laws to permit development of atom power for industrial use.

  Latest pusher is Harold C. Urey, who told the American Chemical Society that atomic power will come sooner if free enterprise is set loose to work on it. And he had an interesting comment: We should think in terms of a new industry—not tacking atoms onto existing industry.

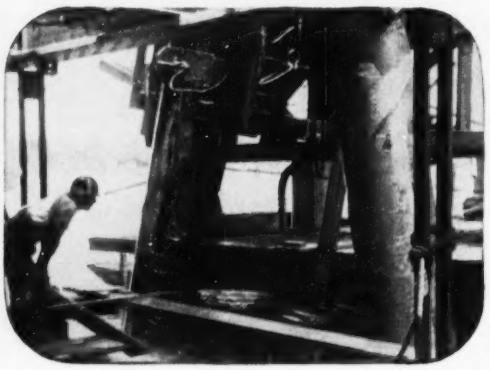
Piles for railway underpass.



Piles for super-highway bridge.

Piles for sewerage treatment plant.

Piles for railway bridge.



Here's the "straight story" on pipe piles

Straight foundation pipe makes for successful driving. This is why so many contractors like Armco Spiral Welded Pipe Piles—they have exceptional straightness and roundness. Driving is easier, faster.

Strength is also an important advantage of Armco Pipe Piles. The tough spiral weld offers high collapse resistance and extra lateral stiffness even in the longest lengths. And because Armco Piles drive straight, the energy of the driving blow reaches the point with minimum loss. Driving time is saved; construction costs are cut.

Although amply strong, Armco Pipe Piles are light in weight for easy handling and hauling. Diameters range from 6 to 36 inches with a wide selection of wall thicknesses. And with these uniform diameters you can economically salvage cut-off lengths.

To make that next foundation job a real money-maker, specify Armco Pipe Piles. For more data, write to Armco Drainage & Metal Products, Inc., 4342 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

ARMCO

PIPE PILES

ARMCO

WASHINGTON OBSERVER

Freight absorption talk is in the air as steel industry operations begin to drop to about 90% of capacity—a new low for the year.

The experts figure that mills will begin paying freight charges in the not too distant future, as they reach out for distant customers. Up to now, the mills in general have been able to sell their output to nearby users at F.O.B. mill prices.

•

Antitrust officials will okay trend toward freight absorption. They see this as an additional sign of price competition—and the Eisenhower men running Federal Trade Commission and the Department of Justice favor such "hard competition."

But they have a sharp eye out for anything that remotely resembles a return to the old basing point system dropped by steel mills after the Cement Institute case was decided by the Supreme Court.

•

Durkin's resignation sharpens cleavage between labor and Eisenhower and clears the way for attacks from all sections of labor during the campaigning next year. And it just about kills any remote chance of revising Taft-Hartley next session. (See page 21.) Durkin was biggest hope for getting through the amendments most wanted by the building trades: easing closed shop ban and permitting pre-hiring contracts.

•

Better break for loans to improve run-down housing is proposed in plans of FHA chief Hollyday. He will ask housing administrator to recommend changes in the law to give older housing an equal break with new housing in getting FHA insurance.

FHA has upped interest rates on bonds given mortgage holders when mortgages can't be paid off. It's part-and-parcel of the increase in rates of all government securities.

•

More money for upstream flood control is caught in a go-around between Department of Agriculture soil conservation experts and House Agriculture chairman Cliff Hope.

Hope pushed through $5-million appropriation to build dams, dikes, and other small upstream works this year. Hope wants more money spent this way, and has been pestering Agriculture to come up with new facts-and-figures to give his ideas support.

Agriculture says no more research is needed—that they already have plans calling for the spending of hundreds of millions of dollars of just such work, for the Missouri Basin, and for other river basins.

•

New Federal Reserve Board move to provide credit during the seasonal money tightness has been expected for the past couple weeks. The board has been increasing bank reserves by buying government bonds—and talk of new lowering of reserve requirements has been persistent. Both measures provide expansion of funds available for lending.

Hope for overhaul of tax laws dims. So-called "technical revisions to straighten out inequities" always cost money—and Treasury Secretary Humphrey has been plugging for tax increases, not cuts. Odds still favor some reductions next year—but it's hard to tell where they'll come. Excess profits tax will die, of course; and personal income taxes will be cut on schedule.

European bases are getting a going-over from two subcommittees of Armed Services Committees of House and Senate. Groups headed by Sen. Case, and Cong. Paul Cunningham are hitting about every country. They may have a say in shifting sites of bases yet to be built.

The KING of them all...

It's the NEW model 5-30 HOMELITE 5.5 Brake hp

One Man Chain Saw

- More Power
- Faster Cutting
- Easy Handling
- Low Maintenance

30 pounds—5.5 Brake horsepower

Here is the saw for the man who wants *extra, dependable power* for clearing wooded areas or cutting piling and heavy timber. It's the saw that gives you more power per pound than any other one man chain saw on the market.

Pick it up and handle it. You'll be amazed at its light and balanced weight. Pull the starter and see how easily and quickly it starts. But most important, let it get its teeth in a tree and see how lightning fast it cuts. Watch this powerful Homelite purr through a 20-inch trunk in as little as 20 seconds. See how quickly and easily it brings down timber 4 feet or more in diameter.

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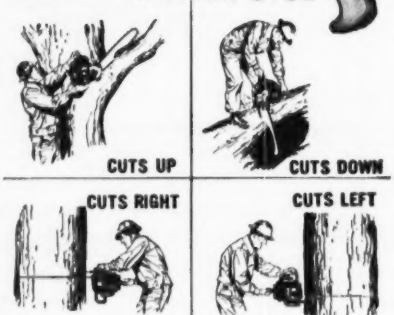

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Labor unity plans offer hope of less jurisdictional strife

New disputes procedure will keep carpenters in the AFL—Durkin resignation seen fostering union solidarity

A trend toward greater cooperation, if not actual unity, within the labor movement with a resulting let-up in the jurisdictional disputes that have been plaguing construction seemed to be in the making last week.

Two developments pointed to a more solid labor front:

- An outburst of plans for internal labor peace, notably one for the handling of jurisdictional disputes under which the carpenters union agrees to remain in the AFL.
- Secretary of Labor Martin P. Durkin's resignation, solidifying and intensifying organized labor's opposition to the Administration over failure to act on Taft-Hartley Law amendments.

The major consideration under which the carpenters union agreed to stay in the AFL was that the federation would do something about jurisdictional disputes. In a joint statement issued after a meeting at which the carpenters decided to "continue" their AFL affiliation, AFL president George Meany and carpenters union chief Maurice A. Hutcheson said it was "agreed the American Federation of Labor should adopt some policy definitely designed to prevent raids within our own organization."

The carpenters complained when they "quit" the AFL a month ago the federation was showing more interest in the AFL-CIO no-raiding pact than in straightening out its own jurisdictional problems. Specifically, the carpenters, with sympathetic backing from other building trades unions, thought the AFL should stop unions not in the building trades from doing construction work belonging to building trades craftsmen.

• **Body of law proposed**—The AFL executive council had decided last month that it was going to recommend some sort of jurisdictional disputes-settling plan to the AFL convention opening Sept. 21 in St. Louis. And, this week it was debating what procedure to recommend.

The executive council had before it a plan recommended by the building trades that called for assembling a body of jurisdictional law and for creating an AFL adjudicator to decide disputes on the basis of authoritative rules and precedents.

The plan provides for collection of all information pertaining to the jurisdiction of all AFL unions, including jurisdiction granted by the union's AFL charter, the union's constitution, history of the trade's jurisdiction and any jurisdictional agreements with other AFL unions. The body of law also would include decisions of the AFL executive council and convention.

An office of "AFL Jurisdictional Adjudicator" would be set up in the federation. The adjudicator would decide disputes on the basis of the assembled jurisdictional data. His decisions would be appealable to the executive council and finally to the AFL convention.

• **Idea of "umpire" favored**—AFL council leaders believe this plan, in detail, is impracticable and cumbersome, but they like the idea of having decisions made by a single arbiter.

Current AFL procedure on jurisdictional issues is as follows:

The AFL president tries to get the unions involved to settle any jurisdictional complaint. If he fails, he takes the dispute up with the executive council, which makes a recommendation for settlement to the convention. But the convention's decision has no binding force. A union may appeal directly to the convention, but anyhow it would only refer it to the executive council for a specific recommendation.

The machinists, involved in many disputes with the carpenters, have refused to take their fight to the executive council because it has been dominated by Hutcheson and other building trades leaders. Instead, they have been going to the National Labor Relations Board for certification through representation elections. This is a practice condemned by other building trades unions. As an alternative, the machinists have suggested that an impartial umpire be empowered to settle AFL jurisdictional disputes. This is what the AFL now has in mind.

• **No-raiding agreement**—The AFL convention also will take up the no-raiding agreement drafted by committees of the AFL and CIO and approved by their executive councils. This agreement would be applicable only to those individual AFL and CIO affiliates that sign it. But most are

MAURICE A. HUTCHESON decides to keep carpenters union in AFL in return for new procedure for settling jurisdictional disputes, as new sense of unity develops within labor movement.

MARTIN P. DURKIN resigns as Secretary of Labor, thus solidifying organized labor's opposition to the Eisenhower Administration over failure to act on Taft-Hartley Law amendments.

Labor plans offer hope. . .

expected to sign. It would work like this:

Participating AFL and CIO unions would (1) not organize or try to represent any employees already represented by another AFL or CIO participating union or (2) engage in any cessation of work or refusal to transport, install or otherwise work on or with materials or any other form of concerted activity in support of an attempt to organize or represent those employees.

Any union claiming violation of this agreement would notify a designated representative of the union complained against and the secretary-treasurer of the latter's federation (AFL or CIO). The representatives of the unions would have 15 days to try to settle the question of violation.

If not settled, the secretary-treasurers of the AFL and CIO would try to settle it. Five days later the dispute could be submitted to an impartial umpire appointed by the presidents of the AFL and CIO. He would have 30 days to give a "final and binding" decision on the sole question whether the no-raiding agreement has been violated. Any union found to have violated the agreement would withdraw any claims on the contested employees.

The agreement would not apply to any disputes in which representation petitions are pending before NLRB or other agency on Jan. 1, the day it took effect. The agreement is to run until Dec. 31, 1955. Unions which do not sign it may join up later.

• **Metal trades dubious**—James A. Brownlow, president of the AFL metal trades department, visualizes the agreement as "more far-reaching than merely an agreement not to raid each other."

In his report to last week's metal trades convention he observed that craft workers in plants organized on an industrial basis, usually by CIO unions, might be prevented from joining an AFL craft union through the no-raiding agreement and the possibility that NLRB might use the agreement to tighten up its policies with respect to granting craft union elections where a plant-wide bargaining unit exists. (NLRB has scheduled a hearing on this question Oct. 7).

Brownlow did not make any recommendation, but asked the metal trades delegates to give "full attention" to whether the metal trades unions should go along with the no-raiding agreement.

Some no-raiding agreements already are operating between individual unions. The AFL machinists, for instance, have protective agreements with the CIO auto and rubber workers.

Within the construction industry, a National Joint Board for Settling Jurisdictional Disputes between AFL building trades unions has been functioning rather satisfactorily for more than five years. The joint board plan is currently being revised to strengthen its operation.

• **Terms of reconciliation**—Since the AFL executive council had decided last month to recommend some sort of plan for settling jurisdictional disputes to the convention, it did not consider it was making any concession to the carpenters in return for their re-affiliation.

The AFL did win a concession from the carpenters, however. The union, claiming more than 800,000 members, has for 10 years been paying per capita tax of four cents a month on only 600,000 members, it will now pay on 750,000 members, an increase of $10,000 per month.

William L. (Big Bill) Hutcheson, president emeritus of the carpenters, lost his seat on the executive council as first vice president of the AFL, being replaced by Dav Beck, boss of the teamsters, who became 13th vice president, the others moving up one. But two more vice presidents will be added to the council. They will likely go to one of the Hutchesons and Al Hayes, president of the machinists.

Curtis W. McGraw dies; publishing company head

Curtis W. McGraw, president and chairman of the board of the McGraw-Hill Publishing Co., of which ENGINEERING NEWS-RECORD is a part, died last week unexpectedly and in his sleep at the age of 57. The enduring mark of his leadership in the task of keeping business well informed, shaping the technical development of industry, and holding the nation to an awareness of its power for greatness and goodness will remain on these pages and on those of the many other publications that were under his direction.

He had spent his entire business life with the company and had been its top officer since 1950.

Curtis Whittlesey McGraw was the third son of the late James H. McGraw, Sr., founder of the publishing company. Born in Madison, N. J. he was a graduate of Princeton University. After serving as an infantry officer—reaching the rank of major—in World War I, he joined the McGraw-Hill Book Co. in 1920, and served in various capacities with the company and the publishing company, until he was named president and chairman of the board of the publishing division in 1950.

A man of broad interests, and great capacity for friendships Mr. McGraw was a leader in many civic enterprises in his home city of Princeton; active in charitable organizations concerned with the blind and crippled; was accounted a leader in many business activities both inside and outside the publishing field.

But perhaps his proudest achievement, other than his leadership of the largest publisher of business periodicals in the world, is the new hospital group which stands in Princeton today largely through his efforts.

As chairman of the board of the Princeton Hospital, he undertook three years ago an elaborate plan for the modernization and expansion of the hospitals facilities; sparked a fund-raising drive that brought in more than $1.2 million in public subscription, plus private contributions and federal government participation. The result—now completed—is an integrated unit that includes a completely remodelled main building; a renovated and enlarged nurses' home; a new parking area; a medical office building housing most of the local physicians; and some of the most modern equipment ever installed in a hospital for a city of comparable size.

The achievement was recently hailed by national hospital authorities as outstanding in the United States.

As further evidence of his interest in construction and civic welfare, Mr. McGraw also served for a number of years as chairman of the Princeton Zoning Board—giving up the post only when his business duties made it necessary. He remained a member of the board, however, until his death.

Panel on water resources begins study

Committee of experts drafting points for discussion at Washington Conference of Resources of Future, Inc.

There is hardly a trace of New Deal paternalism among members of the steering committee that met last week to set up guideposts on water resources problems—one of eight areas to be surveyed during the Mid-Century Conference on Resources for the Future in Washington, D. C., December 2-4.

The December conference has been called by Resources of Future, Inc., a non-profit corporation which has received a grant from the Ford Foundation to formulate a basis for the development of national policies relating to all natural resources.

Gilbert Fowler White, president of Haverford College, heads the nine-man committee, and Abel Wolman, professor of sanitary engineering at Johns Hopkins University, is co-chairman. These two men will preside over meetings of the water section during the December forum on natural resources.

Neither White nor Wolman can be called an advocate of federal paternalism in resources development, despite past service on executive study groups for former Presidents Franklin D. Roosevelt and Harry S. Truman. White most recently was vice chairman of Truman's Water Resources Policy Commission, headed by Morris L. Cooke. Before that, he served as a member of the Committee on Natural Resources of the Hoover Commission and as a member of the National Resources Planning Board.

• **Wide experience represented**—Other members of the steering committee are equally far from being classed as bedfellows of New Dear-Fair Deal philosophy.

One of the engineer members is Wesley W. Horner, past president of the American Society of Civil Engineers and senior partner in the St. Louis consulting firm of Horner and Shifrin. Horner was chairman of the National Water Policy Panel of EJC which organized and supervised the development of the EJC report. After the Cooke commission had turned in its monumental three-volume document to the President, Horner's panel in July 1951 issued a pentrating five-page critique. This brief rebuttal blasted particularly those proposals of the Cooke report which would "leave no place" for local initiative in development of water resources.

Another engineer on the steering group is Samuel B. Morris, chief engineer and general manager of the Los Angeles department of water and power, who also served on the Cooke commission. Still another, with a prime interest in pollution control, is Maj. Gen. Warren T. Hannum, chairman of the California State Water Pollution Control Board. Before his retirement in 1944, General Hannum had a long career on river and harbor works with the Army Corps of Engineers.

Others on the committee include a specialist in reclamation and water use law, a wildlife representative, an economist, and a publisher-conservationist.

• **Want no political implications**—Billed as a citizens forum on natural resources, the mid-century conference is making every effort to keep its spirits clear of any implications that it will endorse or propose specific programs. Far from it, says R. G. Gustavson, president of Resources for the Future, Inc., which has $150,000 of Ford Foundation money to finance the show.

Because Horace M. Albright, board chairman of Resources for the Future and president of the United States Potash Co., has publicly acclaimed the work of the Paley Commisison, some observers had expected the conference to promote the recommendations of the Paley Report.

To pull together the whole program, conference chairman Lewis W. Douglas, who also is board chairman of the Mutual Life Insurance Co. of New York, appointed a 16-member top steering committee representing all eight areas of discussion. Besides water resources, these areas take in demands for land, uses of land, nonfuel minerals, energy resources, world supplies and their availability, resources research, and a final section on how to get together, labeled patterns of cooperation.

AGC expects '53 construction to set new record; sees high volume ahead

Volume of new construction put in place this year is expected to approach $35 billion with perhaps another $10 billion being spent for maintenance and repair to set a new record for the eighth consecutive year, H. E. Foreman, managing director of the Associated General Contractors of America reported this week.

"Foreseeable demands for new construction and economic factors point to a continued high level of construction activity in the future," declared Foreman, in his mid-year report to AGC's governing and advisory boards, which opened a three-day meeting in Chicago Monday

Last year the industry attained a volume of $42.3 billion, including new construction amounting to $32.3 billion and $10 billion in maintenance and repair.

Foreman noted that competition was intensifying despite the record volume of work available owing to the industry's marked increase in capacity (ENR Aug. 20, p. 21). He termed this "a fact of importance to the nation" because it means a buyers' market for construction.

"The large volume of work has strained the sources of funds for new construction," AGC's managing director stated in his report. "A trend toward higher interest rates apparently has had its greatest effect on residential construction, which however, continues at a high level."

Despite curtailment of federal public works and defense projects because of budget cuts, Foreman predicted that there will still be a substantial volume of work.

ASCE-AGC finish work on new contract form

A suggested contract form for use as a guide in preparing contracts for private engineering construction projects has been completed by a joint committee representing the American Society of Civil Engineers and the Associated General Contractors of America.

The 15-page document, which is not intended for building construction, replaces a form that had not been altered since 1925. Drafting of the new form was a task which the ASCE-AGC joint cooperative committee assigned itself upon its organization in 1948.

Present co-chairmen of the committee are Gail A. Hathaway, office of the Chief of Army Engineers, for ASCE and Dwight W. Winkelman of D. W. Winkelman Co., Syracuse, N. Y., for AGC.

Copies of the new standard contract form are available from ASCE, 33 West 39th Street, New York 18, N. Y. or A.G.C., Munsey Building, Washington 4, D. C. Price is 25 cents each, $2.75 for a dozen and $20 for 100.

Solution for acid mine wastes seen near

Potomac River Basin Commission reveals progress in its year-old research on stream pollution problem

Practicable and economic methods to stop formation of acid wastes in active coal mines appear almost within reach. But difficult—though not insuperable—problems remain to be solved in applying preventive treatment to abandoned coal mines.

That is the gist of what Director Edwin R. Cotton last week told the Interstate Commission on the Potomic River Basin regarding its year-old research project on acid mine wastes (ENR Feb. 12, p. 24). Field tests now under way in an unused mine near Fairmont, W. Va., have confirmed laboratory results at Johns Hopkins University, where the basic research for the commission was done. By year's end, the commission hopes to know which of 13 chemicals being tested will give the cheapest and most effective treatment.

To engineers, the result achieved in the short time since research work began in June, 1952, are significant. But Cotton cautioned his audience at the commission's twelfth annual meeting that tough problems still to be solved will take two to three years to be worked out.

Pilot tests so far made in small areas (about 10 x 30 ft) of the unused mine give promise that coal companies will be able to prevent acid waste formation by spraying or dusting exposed surfaces—at a saving in corrosion that will more than pay the cost of treatment. Surprisingly, this simple surface treatment looks as if it might be relatively permanent—good for six to eight years, maybe longer.

If continued field tests bear out the favorable results so far obtained, surface treatment would seem to be the answer for active underground and strip mines.

But this method offers no panacea for polluted streams in the older coal producing areas. Flooded mines can be treated by applying the proper chemicals in sufficiently strong solution, and there are four or five possible ways of treating other abandoned mine workings, Cotton said. But some of these old mines haven't been entered for 75 years. Many of them aren't shown on any maps; nobody knows where to look for the abandoned headings for treating the abandoned mines that can be found. And there is not yet any tested method of proved effectiveness.

• **Money needed**—Pilot tests and additional basic research can go on only if the commission finds new sources of financial support, Cotton made clear. Field work alone will cost $40,000 for the fiscal year ending next June 30, he said; the commission's total income runs much less than that. Cotton has talked to the states that are represented on the commission, to coal companies and to chemical manufacturers who might make a profit from sale of treatment materials, but nobody yet has offered to put up any money.

Original funds for the project came as a grant from the U.S. Public Health Service, later supplemented by a second grant. Since July 1, however, the commission has financed the work entirely out of its own pocket. Floyd W. McCollum, who carried out the research assignment at Johns Hopkins and who now directs the field experiments, has become a commission employee.

Johns Hopkins University undertook the job and assigned it to McCollum, working with the departments of chemistry, chemical engineering and sanitary engineering. Walter A. Patrick, professor of chemistry, took a special interest in the project.

• **Results obtained**—Working together on the project, the two researchers developed a theory and tested it in the laboratory. By the first of this year, the Johns Hopkins people and the industrial committee of the interstate commission were satisfied the theory was correct. Of primary significance, the atoms started the reactions that formed the acids. Stop the release and you halt the reaction. There is a whole series of chemicals that could dot it. McCollum is testing about 13 to determine which would be best for practical application of the process.

As one divided from the project, the researchers learned that acids form only on the surface of a coal vein and not throughout the stratum. Applying an inhibitor to the exposed surface stops the acid formation.

But the application does not neutralize existing acids or acid-forming salts.

Laboratory results at Johns Hopkins led to a broadening of the research project. The commission authorized some money to study further the mechanics of the election releases that spark the acid-forming reactions. This investigation looks promising, but no one can say whether it will lead to a better or cheaper method of controlling mine acids.

Oklahoma to build $1-million test road

Bids on Oklahoma's first test road, comparing asphaltic concrete and Portland cement, will be taken next month. The test stretch, now a county highway, will be laid as a four-lane connection between the Oklahoma City terminus of the Turner Turnpike and a junction with U. S. 66.

Including an interchange at the U. S. 66 junction, the project will cost more than $1 million. The test road was authorized by a recent session of the state legislature to establish which material is most economical from the standpoint of original cost, and most serviceable.

Dividing lanes will be checkerboarded with two-mile strips of each material. The interchange will be constructed of similar design. According to C. A. Stoldt, State Highway Director, this method will prevent either material from having an advantage as both will bear the same traffic weight.

First bids will take in grading and drainage, a bridge, four separation structures, and a $100,000 detour.

Highway building restriction vetoed

Pennsylvania's Gov. John S. Fine has vetoed a measure that would have required prior state legislative approval for construction of any limited access highway more than five miles long.

The governor held that the requirement represented a legislative encroachment on the executive branch of the state government and noted that the possibilities of delay in such a procedure posed a threat to orderly development of state highways.

Auto tag revenue aids school financing

Initial steps are being taken to implement a Florida constitutional amendment under which auto licensing revenue is to be used to back county bond issues for school construction. Bond issues totaling $100 million are anticipated.

A seven-county "package" bond issue of $15 million has been approved by a county circuit court ruling and the bonds now go to the State Supreme Court for validation.

The new constitutional amendment earmarks sufficient license tag money for 30 years to guarantee present state school construction allocations to counties.

Kaw Basin cities seek flood control solution

A committee representing 14 municipalities in the lower Kansas River Valley is ready to try its hand at promoting agreement on a flood control program for the Kaw Basin.

Its self-appointed task is to seek a truce between the Army Engineers and state-employed consultants, who have proposed widely divergent flood control programs for the basin (ENR July 30, p. 25).

At the very least, it is hoped to stimulate action on local protection projects.

Known as the Kaw River Flood Committee, the new group represents every incorporated city on the Kansas River from Manhattan, Kan., to Kansas City. Mayor George Schnellbacher of Topeka is president of the committee and Richard Rodgers, Manhattan, Kan., attorney, is vice president.

A meeting will be held with Army Engineers of the Kansas City District Office Oct. 8. The committee then will meet with V. T. Veatch, consulting engineer, Kansas City, Mo., who was one of the authors of the plan developed in a survey made for the Kansas Industrial Development Commission.

Later on the two parties will be brought together for discussions.

The Army Engineers favor a comprehensive dam and reservoir program supplemented by local dikes and levees.

A far less ambitious program of channel improvements and flow-ways was recommended by the state consultants (ENR March 5, p. 21, June 18, p. 25). Heightening the controversy was the consultants' recommendation that work be halted on three big federal dam projects.

Texas seeks master plan for Sabine development

Texas' Sabine Valley Authority has given its engineers the go-ahead signal to lay the paper groundwork for development of the entire Sabine River watershed.

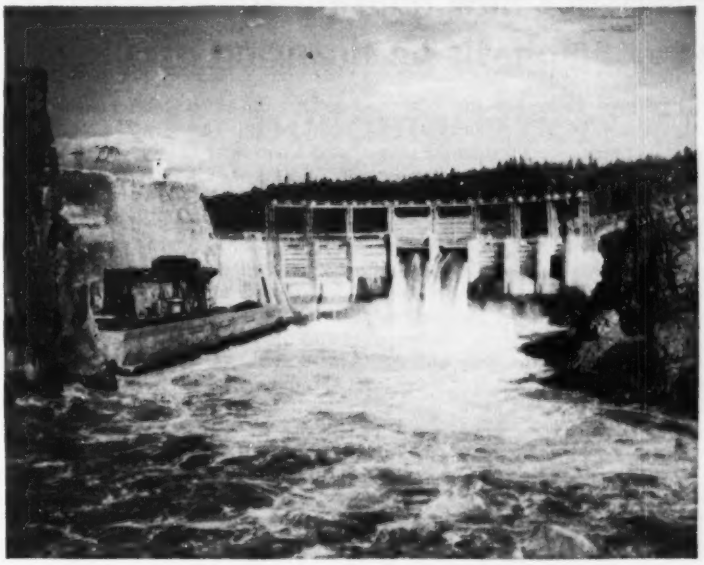
This survey—purely a preliminary step in seeking a master plan—will contain an estimate of the overall cost for the river's development.

The authority is interested not only in new industries, but also in the creation of municipal water reservoirs in the area. One of the first considerations will be the Toledo Bend Dam some 100 miles north of Orange. The main stream dam would be the major water conservation project in the watershed.

Plans to develop resources of the valley first came up in 1940. At that time the Corps of Engineers made a survey but reported unfavorably. Proposed improvements, the corps reported, would not be economically sound.

But that survey came before the growth of war industries along the Texas coast. Developments during the last few years indicate that investment in a long-range industrial program would be justified.

In 1945 Congress authorized a resurvey of industrial potentialities of the area—but didn't get around to setting aside funds for it. Now one of the authority's main jobs will be to throw its weight behind an effort to have this appropriation made by legislators.



Another power boost in Pacific Northwest

Fourth and final 50,000-kw generator has gone into operation at Washington Water Power Co.'s $46-million Cabinet Gorge Dam on the Clark Fork River in northern Idaho (ENR Dec. 13, 1951, p. 36). Lying in a sheer, rocky, curved canyon 350 ft high where the river flows 95 ft deep, the 600-ft U-shaped dam backs up water 24 miles to Noxon Rapids, Mont. and turns out 230,000 kw of power, 30,000 kw over its rated capacity. Noxon Rapids is a site WWP plans to develop at a cost of some $80 million if a merger of WWP and Puget Sound Power & Light is consummated. The 32-month Cabinet Gorge project went through a hectic period in the spring of 1952 when a force of 1,700 workmen completed the concrete structure only 12 days before high water began flowing in the Clark Fork River. Morrison-Knudsen Co., Inc., Boise, Idaho, was the contractor, with Ebasco Services, Inc. representing WWP in design and as resident engineers.

Anti-toll road forces score in Oklahoma

Anti-toll road forces in Oklahoma have forced suspension of state legislation authorizing construction of three toll superhighways by coming up with referendum petitions bearing 80,330 signatures—more than 30,000 over the number which was required originally.

The petitions call for a referendum at the November, 1954, general election.

However, toll road supporters are hopeful that Gov. Johnson Murray, also a turnpike booster, will call for the vote at the July primaries to speed a decision.

The three proposed toll roads at issue would connect with the new Turner Turnpike between Oklahoma City and Tulsa. They include a northeast extension from Tulsa to the Missouri line enroute to Joplin, a leg north from Oklahoma City to the Kansas line enroute to Wichita, and another southwest from Oklahoma City to the Texas line on the road to Wichita Falls.

Petitions were filed by Mayor Lyman Beard of Muskogee, president of the Oklahoma Free Roads Association.

Indicative of the heat generated by the toll road issue in Oklahoma was the recent organization of the Citizens' Turnpike Association, which was formed to counteract the activities of anti-toll road groups (ENR August 6, p. 17).

President's new housing advisory group shows emphasis on financing problems

Money men make up the biggest squad among the 21 members appointed last week by President Eisenhower to his advisory committee on government housing policies and programs.

Nine of those named represent investor interests—apparently in deference both to the prime importance of housing credit and to the government's leading role as a mortgage insurer and guarantor, as well as money-lender and subsidizer.

For example, there is only one member who can be called an expert advocate of low-rent public housing. He will have strong support of course, from the two labor representatives, one from AFL and one from CIO.

Only two home builders and two architects were named last weekend. Real estate brokers also have two spokesmen in the group. Building materials producers have one member. Veterans' organizations likewise are represented by a single appointee.

Eisenhower built up the prestige of the committee by making it a presidential group, with Albert M. Cole, administrator of Housing and Home Finance Agency as chairman (ENR Sept. 10, p. 19).

To help run the group's studies under Cole, Eisenhower named a five-man executive committee that includes his Denver friend and trout-fishing companion, Aksel Nielsen, president of the Title Guaranty Co. of Denver, plus George L. Bliss, president of the Century Federal Savings and Loan Assn. of New York, Ernest J. Bohn of Cleveland and Rodney Lockwood of Detroit.

W. Herbert Welch, former West Virginia newspaperman, will be the secretary of the committee.

Aside from the nine members drawn from investment houses, the committee includes: Alexander Summer, Teaneck, N. J., president of Alexander Summer Corp. and past president of National Association of Real Estate Boards; Bruce Savage, president, Bruce Savage Co., Indianapolis, Ind., former director of National Association of Real Estate Boards; Ralph T. Walker, architect, Vorhees Walker, Foley & Smith, and past president, American Institute of Architects; Paul Williams, architect, Los Angeles; Richard J. Gray, president, Building and Construction Trades Department, AFL; James T. Thimmes, vice-president, United Steel Workers and chairman CIO housing committee; Richard G. Hughes, first vice president, National Association of Home Builders, Pampa, Tex.; Lockwood, past president National Association of Home Builders, Detroit, Mich.; Leslie Martin Cassidy, vice-president, Johns Manville Corp., N. Y.; and Thomas W. Moses, attorney, Pittsburgh, Pa., chairman National Housing Committee, American Legion.

Better financing of home renovations explored as aid to slum clearance

New methods of financing may be necessary if restoration of blighted urban areas by voluntary action of property owners is to succeed.

This opinion was expressed repeatedly at sessions of a so-called slum clearance school conducted in New Orleans last week under auspices of the National Association of Home Builders. Known as the Cities Organized Reconstruction Institute, the conference was the first of its kind to be held. It included delegates from nine cities—New Orleans, Fort Worth, San Antonio, Santa Fe, Memphis, Birmingham, Miami, Baltimore and Charlotte, N. C.

John M. Dickerman, executive vice president of NAHB, discussed the "trade-in" program in respect to preservation of existing houses and estimated that 250,000 dwellings could be renovated annually this way.

Better homes will result from encouragement of improved financing methods for renovation, Dickerman declared.

L. J. Dumestre, Louisiana Federal Housing Administration director, disclosed that Washington is studying how FHA-insured loans might help property owners restore slum dwellings. He said that he has recommended that FHA-insured loans for remodeling slum dwellings have longer amortization periods.

G. Yates Cook, who developed the "Baltimore plan" and who is acting director of a similar program recently instituted in New Orleans, suggested that citizen study groups in cities where rehabilitation programs are underway employ a full-time secretary and attorney. He also recommended they employ 10 inspectors per 100,000 of population.

LT. GEN. RAYMOND A. WHEELER to take UN post

Army Engineer ex-chief to head refugee agency

Lt. Gen. Raymond A. Wheeler, engineering adviser to the International Bank for Reconstruction and Development and former Army Chief of Engineers, will soon become director of the United Nations Relief and Works Agency for Palestine Refugees in the Near East. His rank in the UN will be that of Assistant Secretary General.

General Wheeler's nomination by the U.S. government has been submited by UN Secretary General Dag Hammarskjold to the UN seven-member advisory commission on the Palestine agency. Automatic approval of the nomination is certain.

With his retirement as Chief of Army Engineers in June 1948, General Wheeler ended 41 years of military service. A 1911 West Point graduate and holder of the Distinguished Service Medal, he held several important commands in the China-Burma-India Theater during World War II. He was in charge of construction of the Burma Road and set up Lend-Lease supply lines to Russia through the Middle East.

Jersey speeds parkway

The New Jersey Highway Authority has announced it plans issuance of another $135 million in bonds around Nov. 1. This will be in addition to a $150-million issue floated in July.

Under the state authority's accelerated program, completion of the 165-mile Garden State Parkway is scheduled for Dec. 1, 1954. The agency's idle funds are being re-invested to reduce interest charges.

Time for incentive plan for building labor?

Need for plan to boost productivity—especially in home construction trades—seen in report

Despite traditional opposition within the construction industry to any piecework or incentive system, current high costs of building should force a second look at possibilities of such a plan, a Trinity College professor said last week.

"There is no reason—under proper safeguards—why many of the construction trades could not be geared to an incentive production system," Richard Scheuch, assistant professor of economics at Trinity, suggested in a lengthy study report on the problem released last week.

"Certainly, construction—with its emphasis on the costs of labor in the United States—is a field where any loss of productivity by labor becomes immediately and painfully apparent. No means of maintaining good productivity should be discarded on any categorical basis."

Scheuch's report made these points:

1. Many building trades—lathers, plasterers, paperhangers, painters—are so organized that piecework is already possible and permitted in some instances.

2. An incentive system would function most noticeably in the home-building field, where individual construction jobs could most easily be broken into standard units of work.

3. There is ample recent experience in several European countries—notably England and Holland—to indicate that the system can work.

• **Pro side**—Here's how Scheuch lines up the arguments in favor of incentives:

"Let's consider the technical feasibility of incentive work without regard to political and institutional considerations objectionable to many trades unions in single-family residential work. And if the system could apply there, it could also apply on other types of building:

Successful operation on a single-family housing project would require a certain amount of planning and scheduling. Where work is done by large firms, technical and managerial ability needed to institute the incentive system may be available. But in residential work such standards are often low and single-unit projects not uncommon.

While the ease with which standards can be evolved in small-house construction varies, incentive work should prove practicable in terms of bundles of lathing, square yards of plaster, amount of bricks laid or electrical outlets roughed in. During the war a number of such schemes were instituted under open shop conditions. Satisfactory results were claimed both in terms of productivity and quality of work, Scheuch asserted.

The system should incorporate a minimum time rate with a bonus for exceeding the base output for the period, he urged. Payment by the piece—without any minimum hourly guarantee—is generally not feasible in the building trades because of the lack of a fixed working place, the absence of conventional assembly-line technique, the numerous factors which might interrupt the flow of materials to workers.

Additional features would have to be included in any scheme if it is to be accepted voluntarily and operated successfully. It should be established by mutual management-labor agreement. It should be directed by an equal number of representatives from both parties—or perhaps by a neutral third party. And in the event that agreement on rate revision can't be reached the matter should be submitted to arbitration. Attempting a unilateral setup of the system would be undesirable, he continued.

• **Con side**—It's also true that the establishment and operation of a soundly conceived incentive plan may be costly. Whether costs would be unduly high on single-family projects can be determined only by experience. They might prove prohibitive but it must be remembered, Scheuch warned, that relatively few schedules would be needed as only a limited number of trades are employed on such work.

It was obvious to Scheuch why the bulk of opinion rejects incentive work in building. For one thing, dissimilarity in jobs makes it difficult to define the unit and measure the volume of performance. Inter-job work comparisons are another stumbling block, posing not only questions of equity but perhaps a threat to the standard wage rate in a trade.

Recent experience in a number of European countries indicates that incentive systems are technically feasible in construction trades. Scandinavian countries, Bulgaria, Czechoslovakia, the Netherlands, Poland and

Incentive plan catching on in Holland

When it comes to applying the bonus rate system to its building trades Holland has an eye to an old Dutch proverb: "Unknown, unloved." The country is getting the hang of the incentive scheme. Whether it will keep it remains to be seen.

In order to step up postwar production, the government introduced a time-standard agreement for the building trades. Under this agreement, rates are based on a work performances standard within reach of the average worker. And workmen are entitled to a 25% bonus over the hourly pay rate.

An employer who wants work done under a piece-rate system submits rates for approval to a committee made up of government-employer-labor representatives. This committee has a list of basic standard times (not obligatory) for the main trades.

The government endorses time-study technique as the means of fixing tariff standards. Time-study men apply two points. The first: 'frequency of action,' (how many cleats are used in building a casing for concrete?). The second: 'factors of influence,' (what's the effect of wind on wheelbarrow transporting?).

The system's best results have come in building prefabricated houses. Influence also is notable in traditional house building, especially in bricklaying work.

Utility building offers the greatest difficulties because time standards based on experience proved unsatisfactory. Also, conditions on such jobs often drastically change.

Holland doesn't expect the building trades ever to have rates equal in refinement to those prevailing in mass production industrial plants. Standard conditions are hard to find in construction. Work rarely consists of an uninterrupted series of similar operations. And bonus rates can be applied successfully only if skill and routine of the workmen are of fair standard.

Time for incentive plan?

the United Kingdom apply the system widely. And, to a lesser extent, so do Germany, Greece, France, Italy and Switzerland.

The British scheme is particularly interesting, Scheuch said.

Prior to World War II, the National Civil Engineering Agreement permitted payment of bonuses. Unofficial incentive systems operated but there was no nationwide plan of bonusing—arrangements were made on individual sites.

Then, during the war, loss of workers to the armed forces and to munition industries led to decreased productivity on government construction. Britain—in an effort to raise productivity on government work—proposed a system of payment by results.

Building trades unions opposed such a scheme for four basic reasons: fear of rate cutting, and unemployment, harmful effects on the quality of work and on the social solidarity of the working group.

• **Tempering influences**—But certain conditions weakened the opposition. Since rates were to be calculated by the government, there was less fear of opportunistic use of the system by employers. Older workers and less efficient young workers had lowered production so there was little likelihood that dangerously high output standards would be established. The danger of friction among workers was lessened because they felt they were working for a common cause, according to the study.

In the absence of alternative proposals, payment by results was introduced on essential work. It was made obligatory on all scheduled undertakings or sites wherever practicable and desirable—as decided by the Ministry of Labour.

It was permissible on civil engineering sites not so covered. But the government did not recognize bonus payment on building trade operations on any nonscheduled work carried out directly or partly at government expense.

This is how the system was set up:

- Bonus, payable where output exceeded advance targets, was in addition to the going hourly rate.
- Basic output rates or targets were described in schedules for the trades.
- If there was an increase in output above set targets, workers responsible received a specified bonus payment.
- Bonus rates were calculated on the basic national hourly wage rates with adjustments if so-called plus rates were applied. Thus rates were uniform.
- In the case of machine operations, output was calculated on a machine-hour basis.
- In some schedules, basic outputs were defined in terms of man hours for a given amount of work. Operatives were entitled to a bonus for each hour saved.
- In other schedules, provision was made for paying operatives engaged in non-measurable work when they were of assistance to men engaged in bonus type work.
- Foremen, walking gangers and supervisors were not included in the scheme.
- Basic outputs were intended to apply to reasonably favorable conditions. In exceptional cases, target adjustments were authorized subject to agreement between employers and employees on the involved site.
- The amount of bonus was not subject to any maximum.

• **Ended in 1947**—Schedules drawn up for the various trades were complex and introduced gradually. There were seven operations covered originally—eventually this number was increased to 28.

In 1947 the Essential Work Order was withdrawn and the incentive system ceased to operate.

Investigations into the extent of bonusing on war-time contracts drew these conclusions. On the average, 84% of the total men on site were engaged in work of a bonusable nature; 57% of their total work hours were spent on bonused work. The average bonus earnings on all operations covered by the main trade schedules (excluding temporary housing) equaled 27% of basic wage earnings.

The building trades unions opposed continuation of the system during the postwar period. However, as a precondition for a wage increase, employers demanded that such an increase be linked with increased production.

So in 1947 a new National Working Rule provided that incentive schemes could be initiated by individual employers for an experimental period under certain specified conditions.

Scheuch noted that the lesser number of recognized building trades, the national negotiation of agreements and the greater uniformity of hourly rates made it relatively easy to introduce incentive work in the British building trades.

It may be that in this country the operation of such a scheme would not yield corresponding benefits, the report suggested. However, there is nothing to indicate that the problem of output measurement is insoluble in the majority of construction trades or that equitable wage standards ultimately would not be evolved.

Every time a contractor makes a bid he is—in effect—translating hourly wage rates into the productivity obtained. In this sense, measurement of worker output on even single-family projects long has been demonstrated, Scheuch concluded.

Labor briefs . . .

• **Compensation boosted**—Workmen's compensation insurance rates for the contracting group in Pennsylvania have been boosted 10.8%. The new benefit schedule increases the maximum weekly payments for total disability from $30 to $32.50 (labor asked $35), and the minimum from $20 to 22.50. For partial disability, maximum payment goes up from $21.25 to $23 a week, payable for as long as 350 weeks instead of 300.

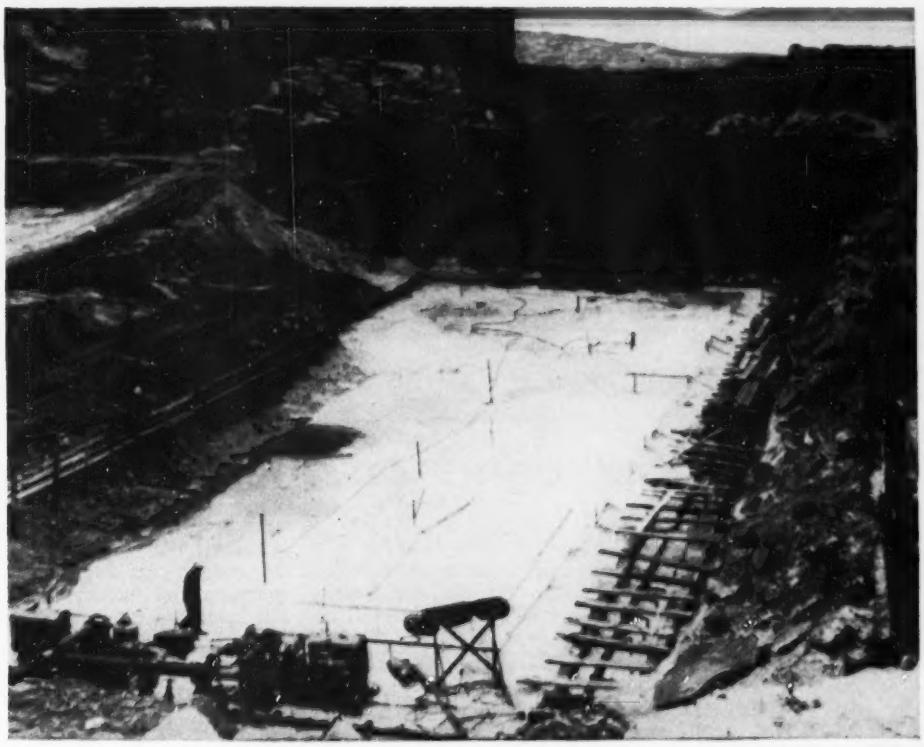
• **Boston breakdown**—More than 1,000 union plumbers and gas fitters have gone on strike in Greater Boston following the breakdown of negotiations between the Masters Plumbers Assn. and the AFL plumbers and gas fitters local. The union is seeking a 14-cent hourly wage boost to bring its rate up to $24 a day.

• **Contractors woo carpenters**—Union carpenters returned to their jobs in Sioux Falls, S.D., after a four-month strike against constructors. Their settlement a pay increase of five cents an hour, 15 cents less than the original demand.

• **Sad secretary**—"I wasn't happy there." That's the reason Courtney D. Ward gave for resigning from his management job as executive secretary of Cleveland's Painting and Decorating Contractors Assn. Ward—former general secretary of the AFL painters district council in Cleveland—plans to serve a six-month painting stint to "catch up" on advancements in the trade. Then he'll start his own painter contracting business.

Can you dewater ROCK excavation with *Stang* WELLPOINTS?

Yes, you can—and Stang Wellpoints did it on the excavation for ST. ANTHONY FALLS LOWER LOCK AND DAM at Minneapolis, Minn. (Project now under construction).



Stang Wellpoints surround the excavation. Mississippi River is seen at top of photograph.

The excavation shown on above photo is in water bearing St. Peters sandstone, a friable type rock made up of silica particles. When exposed to the air, it disintegrates slowly.

Further complications arose due to the presence of soft strata, tending to cause piping and resulting "blows" from the river.

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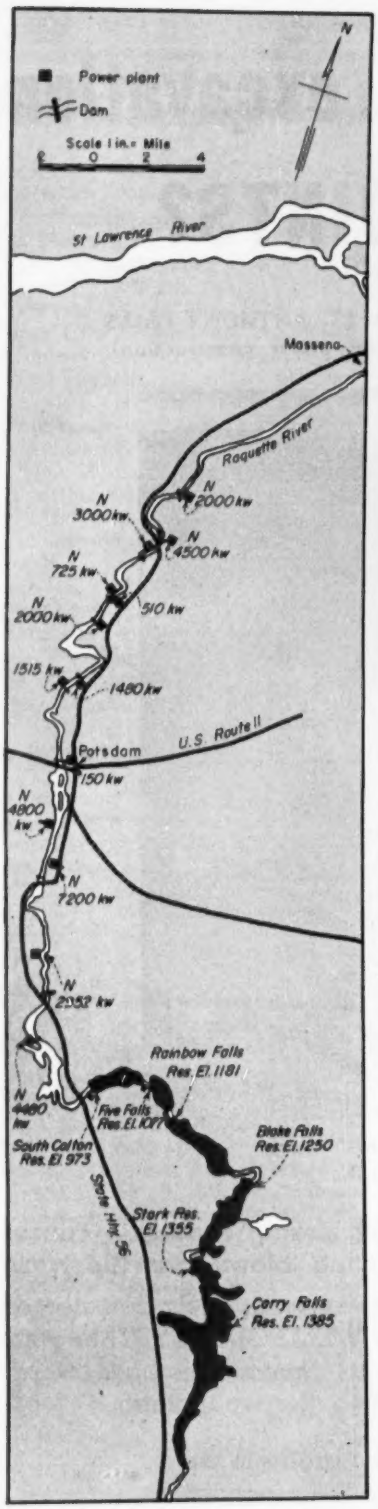
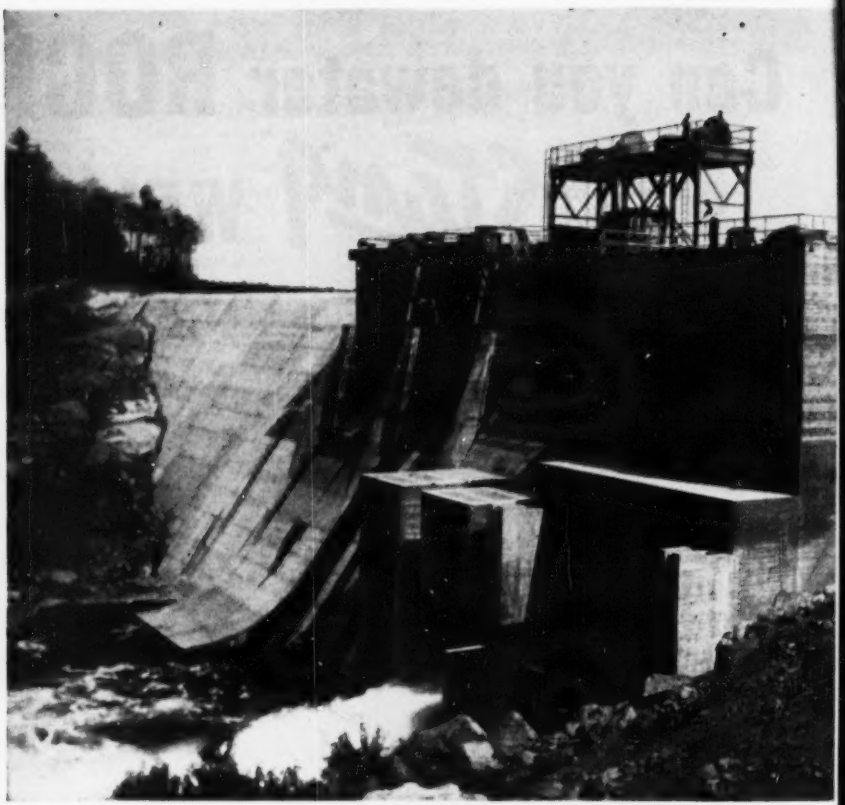


FULL DEVELOPMENT of Raquette River will be achieved when six-reservoir project (black) is completed in 1957. Squares are existing generating plants. "N" denotes Niagara Mohawk plants. Potsdam is about 120 miles north of Utica, N. Y., near St. Lawrence River.



Six dams on the Raquette

New York State's Canadian frontier has been ablaze for some time with public vs private battles over hydropower sponsorship, but the interior has enjoyed relatively peaceful development along the streams that tumble out of the lush Adirondack Mountains.

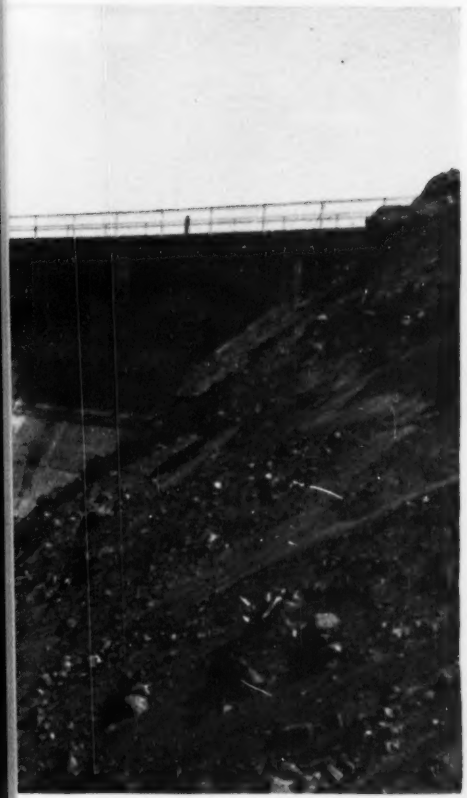
Niagara Mohawk Power Corp., which has waged a long and spectacular fight for the right to harness new power at Niagara Falls, also is big in the inland picture.

On Raquette River, a tributary of the St. Lawrence, for instance Niagara Mohawk operates nine of thirteen existing hydropower plants. Now the company has gone upstream: It is in the midst of a seven-year, $25.5 million construction program that will put five new generating stations on the line by 1957, and add 100,000 kw to system capacity. The scheduled program now includes six dams, one for each generating station and one that impounds a primary storage reservoir.

• **Storage dam**—The storage dam is located at Carry Falls, farthest up the Raquette. Begun in 1951, it was finally completed last year. The 3,300-acre reservoir filled quickly this spring, becoming of immediate use in regulating flow for operation of existing plants. A storage capacity of 115,000 acre ft is sufficient to support half-time generation at the river's plants throughout the year. Plants operate on 2,600 cfs.

RAQUETTE HYDROPOWER SUMMARY

Dam	Height ft	Length ft	Gross head ft	Generator cap. kva	Completion date
South Colton	45	600	85	21,500	April 1954
Five Falls	50	500	104	25,000	Jan. 1955
Rainbow Falls	78	600	102	25,000	Nov. 1955
Blake Falls	50	600	69	16,000	Aug. 1956
Stark	40	235	105	25,000	June 1957
Carry Falls	70	830	—	—	Nov. 1952

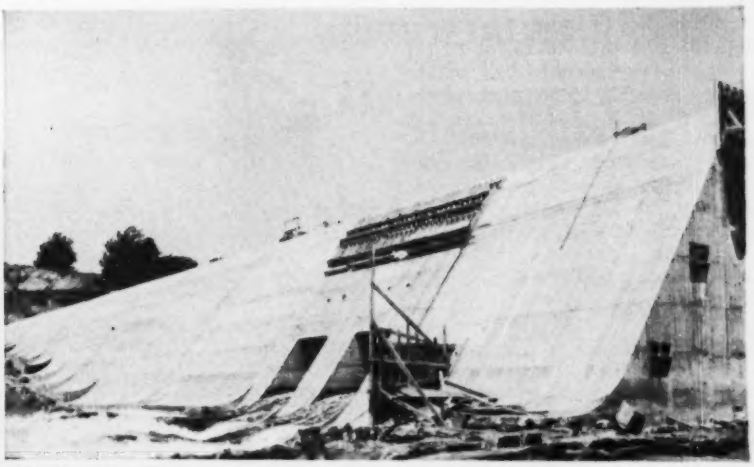


CARRY FALLS DAM is key unit in Raquette River construction program. Located farthest upstream, it is primarily for riverflow regulation, though there is provision (right) for a small generating unit. Reservoir is 115,000 acre-ft.

Carry Falls Dam consists of a concrete section 830 ft long and 70 ft high, and five earth dikes. When the reservoir is at normal elevation, 1385 ft, two spillway sections surmounted by tainter gates will pass 11,000 cfs. (Maximum flow this spring was 7,000 cfs). In addition to two 10x10-ft outlet gates (total capacity 8,000 cfs) the dam contains provision for a small power unit.

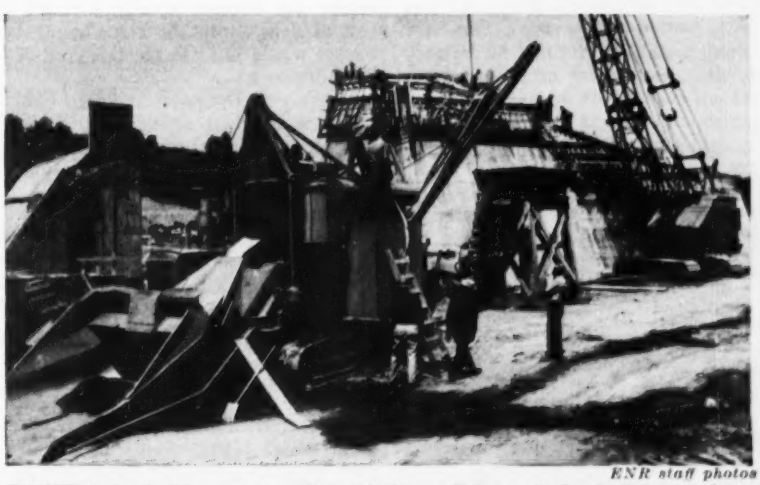
Almost all of the program's power, however, will be generated at the five dams downstream from Carry Falls. Each dam will back a reservoir to the tailwater level of the power station next upstream. All will be concrete structures with ogee overflow cross sections. Rainbow Falls Dam, third of the power structures, will be the next to be placed under construction (Jan. 1, 1954). A road now is being built to the site.

• **Dams under way**—Currently under construction are South Colton Dam and Five Falls Dam. In both cases the construction approach has been to build earth dikes connected by a crib-supported timber bridge, across



SOUTH COLTON DAM is first power structure in current program. Water diverted for second-stage construction goes through temporary sluices (left), so gap in overflow section can be concreted.

FIVE FALLS DAM first-stage construction is under way (left) as river is diverted through timber crib bridge. Note beginning of cofferdam running downstream from bridge abutment.



ENR staff photos

PAVER is the flexible concrete mixing unit for small dams. At South Colton its boom is raised to load hopper, which in turn feeds crane-handled bucket.

the Raquette about 40 ft above the dam's proposed upstream face. Another earth dike extending downstream from the right-dike abutment of the bridge encloses roughly half of the damsite, allowing construction of the right half of the concrete overflow section. This section contains two 10x10-ft temporary sluices that carry water during second-stage diversion, which is effected by breaching the right dike and closing the timber bridge with dumped rock and fill. Construction proceeds on the rest of the overflow section and the outlet works.

At 45-ft-high South Colton Dam, the outlet works will feed a steel penstock 1,300 ft long and 18 ft dia, leading water into the powerhouse with an effective head of 85 ft. A surge tank 60 ft dia and 70 ft high will be located just above the power house. Five Falls Dam, 50 ft high, will have a similar surge tank and an 18-ft dia penstock 1,700 ft long providing 104 ft of gross head at the turbine.

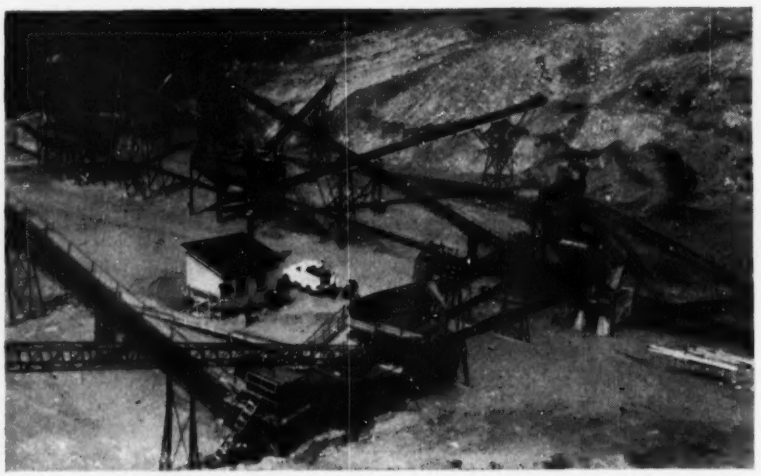
The dams are designed by Niagara Mohawk's engineering department, which also supervises construction. Sites are generally tight granite formations, which take little grout and require a minimum of stripping from the rock surface before concrete is placed.

South Colton Dam will require about 19,500 cu yd of concrete and Five Falls Dam 22,000 cu yd. Because the dams are small there is no concrete cooling problem, and Niagara-Mohawk places no restriction on the height of lifts. However, the job schedule and batch plant capacity usually limit lifts to 5 ft. Mass concrete has been a 5-bag per cu yd mix, with a water-cement ratio of 6.1 gal per sack. A richer mix is used for structural concrete. Recently the use of fly-ash has enabled reduction of cement content to 4 bags per cu yd. Three sizes of coarse aggregates, 1-in., 1½-in., and 3-in. are used. Concrete testing is being performed by Niagara Mohawk, except for occasional compression check tests by the Civil engineering department at Clarkson College of Technology, at nearby Potsdam.

• **Pavers mix concrete**—As on other small dams, pavers have proved to be flexible and productive concrete-mixing units. The 34 E double-drum rig with high-lift discharge boom can be spotted quickly for any scheduled concrete pour, and it normally puts out 300 cu yd of concrete in a working day. The bucket discharges into a four-yard hopper, which feeds a two-yard concrete bucket that a crane swings to place over the forms. The hopper is big enough to handle accumulations of concrete that occur when bucket placement is delayed briefly by working conditions. (Direct discharge into the crane-handled bucket would not provide this kind of flexibility.)

BATCH PLANT loads trucks that serve paver. Aggregate stockpile setup makes use of the increasingly popular . . .

RECLAIMING TUNNEL under stockpiles. Supply trucks dump through runway framework.



HOW AN AGGREGATE PLANT LOOKS just before it goes into operation. Innocent of dust and stockpiles when photographed, this newly-installed 200-ton-per hour crushing and screening plant since has shortened by several miles the aggregate haul to Raquette River construction.

Backing up the paver at South Colton is a standard dry-batching plant and an aggregate stockpile setup that makes use of the increasingly-popular reclaiming tunnel. The stockpiles, separated by timber bulkheads, are at the foot of a 20 ft-high embankment. Rough timber runways extend horizontally from the top of the bank out over the stockpiles, so that aggregate trucks can back out onto the runways and dump through them. The reclaiming tunnel, running under all of the stockpiles, is an 8-ft dia tube assembled from curved corrugated metal plates. Gated doors in its top feed aggregates onto a belt conveyor, which carries the materials to the batch-plant elevator.

Cement comes from five different mills downstate, the nearest being at Syracuse. Fly ash comes from Niagara Mohawk's steam plant at Oswego, N. Y. Until recently aggregates were trucked from a plant 15 miles away, but the contractor now has opened a pit, six miles away, that is equipped to deliver 200 tons of aggregates per hour. This pit is operated for Niagara Mohawk by the general contractor.

Contractor for all six dams is Raquette River Construction Co., an association of Potsdam building contractor Putnam-Hawley Co., and Edson A. Martin, local business man. Mr. Martin is president of Raquette River Const. Co. and Harold Putnam is vice-president and chief engineer.

System project engineer for Niagara Mohawk at the company's Buffalo headquarters is H. I. Howell. Resident engineer is Myrle Morris, assisted by Alan Willard.

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Water supply structure gets finishing touches to become . . .

East's first fly-ash concrete dam

For every 3 bags of cement there are 92 lb of fly ash in Baltimore's Liberty Dam, now being completed on the North Branch of the Patapsco River.

As The Arundel Corporation of Baltimore puts the finishing touches on the $4.9-million water supply project this month, its records show that a total of 8,300 tons of fly ash were used in this, the East's first major dam to incorporate the pozzolanic material.

Bernard L. Werner, who as Baltimore's deputy water engineer pioneered the use of fly ash in the 160,000-cu yd dam, is satisfied that it was worth using. He was influenced by its major use to date at Hungry Horse Dam in Montana (ENR June 22, 1950, p. 39), where about $1.5 million was reported saved in replacement of cement by fly ash. Baltimore has saved about $80,000, or $.50 per cu yd on the construction of its much smaller structure.

According to Vice-President C. W. Black, The Arundel Corporation is satisfied, too, by this experience with the material. The contractor purchased the fly ash at a steam power station 22 miles from the damsite and was paid $5 per ton for the material placed in the dam. No undue handling problems were encountered. Tank trucks with twin unloading screws were used for the haul, and overcame an arching tendency in getting fly ash from truck to the storage silo at the on-site batching and mixing plant.

All the usually mentioned advantages of the pozzolanic replacement for cement are claimed for the Liberty Dam concrete: low heat of hydration, increased workability, reduced segregation and bleeding, and increased later strength.

The city's Bureau of Water Supply set up this specification on the fly ash used:

Minimum silicon dioxide	40%
Minimum aluminum oxide	15%
Maximum carbon	10%
Maximum moisture content	3%
Minimum fineness (sq cm per gm)	2,500

Type 2 portland cement was specified along with the fly ash for its low-heat advantage. And an additive was used for air entrainment. The mix for the face of the dam got an extra bag of cement per cubic yard of concrete.

Aside from its use of fly ash and the fact that it is among the larger concrete dams built lately for municipal water supply, Liberty Dam is a fairly straightforward structure, with good rock and no real foundation problem. It attracted no less than ten bidders back in August, 1951, and four of them bid under $5 million.

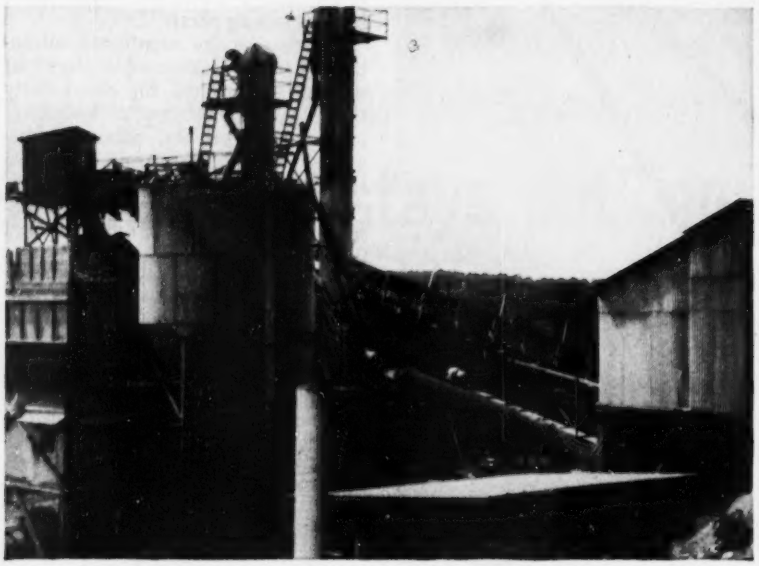
Arundel went to work Aug. 20, 1951, bringing a 25-ton cableway onto the job to handle concrete in an 8-cu yd bucket. The 1,400-ft cableway placed 5-ft lifts in blocks 50 ft wide—with 72 hours between pours. The 704-ft long dam has a 480-ft open spillway 160 ft high above bedrock.

This spillway height will form a pool of 43 billion gallons, or 133,000 acre-ft, extending 8 miles upstream. The new reservoir is expected to take nearly 14 months to fill when a 10x8-ft opening near the base of the dam is finally plugged with concrete.

(A 24-in. conduit through the dam was cast as somewhat of an afterthought to insure some flow in the river downstream should there be a drought more severe than that in 1930-32. There are two textile mills and one paperboard mill on this branch of the river below the dam. The conduit will insure means of discharging water for any future needs.)

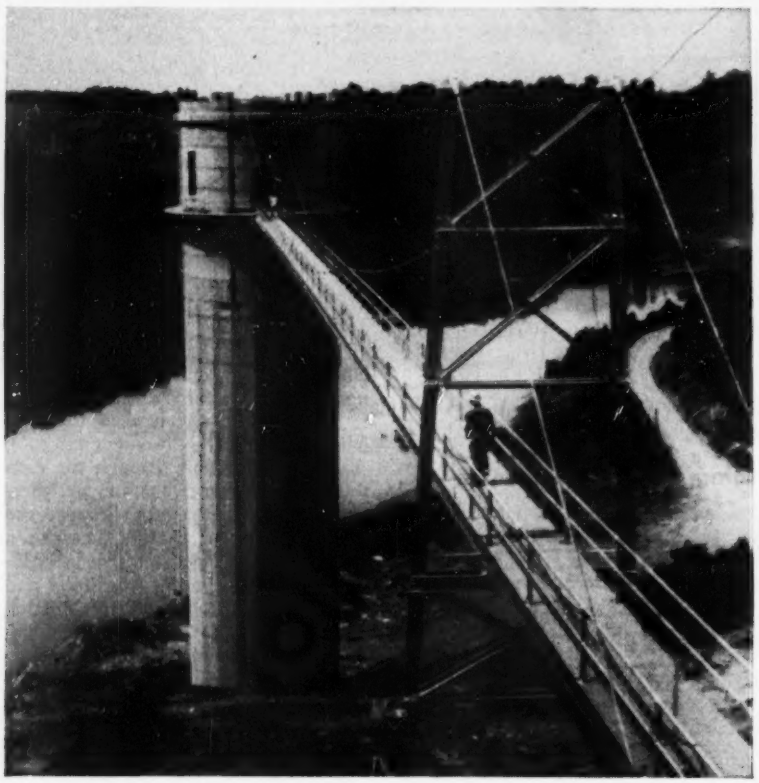
• **Structures upstream**—The pool to extend 8 miles upstream necessitates road relocation and construction of four bridges. J. E. Greiner Co., Baltimore, designed the bridges which range from 544 to 1,681 ft in length. The longest, a $1.5-million job, will carry Liberty Road over a 114-ft depth of water in the reservoir.

Also upstream from the dam about a mile and a half the tower intake was recently completed under the dam contract. Through the eight gates of



CONCRETE BATCHING PLANT fed fly ash into 4-cu yd mixer with no difficulty. Placing concrete by cableway (not shown) was a 2-shift operation.

TEMPORARY DAM, paved rockfill 16 ft high x 225 ft long, now diverts 50 mgd.



ALUMINUM SUSPENSION BRIDGE, believed the first such permanent structure built, ties 178-ft high tower intake to shore. It is 270 ft from the gatehouse to the 34-ft high steel tower on a concrete pier at shore and another 40 ft from pier to concrete anchorage. The two 1¼-in. prestressed single span galvanized bridge cables anchor into the roof of the gatehouse and the concrete ashore with galvanized steel backstays. The 4-ft walkway is a 1¼-in. aluminum subway grating suspended by ⅛-in. galvanized wire rope suspenders spaced 9 ft on centers; it has an aluminum pipe railing each side. The floor system consists of two 12-in. aluminum channels at 10.67 lb, with cross-bracing of 3x2½x¼-in. angles. The bridge has a camber of 4 in. Fabrication was done by Washington Aluminum Co. of Baltimore at a cost of $31,400, including erection.

Fly ash dam . . .

this 178-ft high gatehouse, water already can flow into the 17-mile tunnel to Montebello treatment plant (ENR Jan. 4, 1951, p. 32).

This tunnel (10 ft in diameter for 13 miles and 7 ft for 4 miles) was finished in 1951 by S. R. Rosoff, Ltd., at a cost near $23 million, and is now delivering an average 50 mgd to Montebello treatment works. The city really needs the water, with its consumption averaging near 200 mgd and reaching peaks near 230 mgd.

Safe yield from behind Liberty Dam will be 95 mgd when the reservoir fills up, and even that is not enough. An advisory group, consisting of Abel Wolman, Gustav Requardt, and Harry B. Shaw, is due very soon to submit its recommendation on added sources for the future. Meanwhile, the Ashburton filtration plant, designed by Whitman, Requardt and Associates, has recently been bid on. The Arundel Corporation was low bidder at $11,590,000 and will be pushed toward completion in 1956 to handle increased flows.

• **City loggers**—Some 3,500 acres of land had to be cleared above the dam, and it was decided the forces of the Bureau of Water Supply would tackle the job. Lumber has been produced and made available to various city departments. Trees too small for lumber have been cut up as pulp wood and sold to a mill some 38 miles away at about $15 per cord—a $1,200-per-week gross for a while.

Trees were cut from 6 to 10 in. from the ground. Grubbing was determined to be unjustified and will not be done.

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Get that extra power, extra speed, extra smoothness that means extra yardage, now, with a Torque Converter driven Manitowoc excavator.

No other machine like it. Gives you more power when you need it, more bail pull in tough going—smoother, faster acceleration throughout the entire cycle. Enables you to handle bigger loads, shock loads, jars and jolts without damage to mechanism.

And when it comes to rock, you'll hardly believe your eyes. It "slugs" right through, like the old steam powered rigs. It's the greatest advancement in shovel history—and it's yours now, today, in the Manitowoc line. Backed by over 12 years' experience—now in hundreds of Manitowocs. Send for details. Manitowoc Engineering Corp., Manitowoc, Wisconsin.

BALANCED POWER

Engine operates at maximum efficiency at all times—full engine power for full loads—just enough power for light loads—automatically selected. Engine cannot be stalled—no delays waiting for engine to pick up speed.

SMOOTHER OPERATION

Oil cushion absorbs jolts and jars. Saves cables, clutches, gears and assemblies. Less down time means more yardage.

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"Fraction of inch" control by either hand throttle or foot accelerator, without slipping clutches or shifting speeds. Makes an expert out of an average operator. Ideal for crane service, setting steel and stone, and general erection work.

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SAMSON BLOCK CO. ADDS ERIE PORTABLE TRUCK MIXER PLANT — OPERATION NOW IS AMONG FLORIDA'S FINEST

"ERIE EQUIPMENT GIVES US ACCURATE BATCH CONTROL AND A PLANT ONE MAN CAN OPERATE".

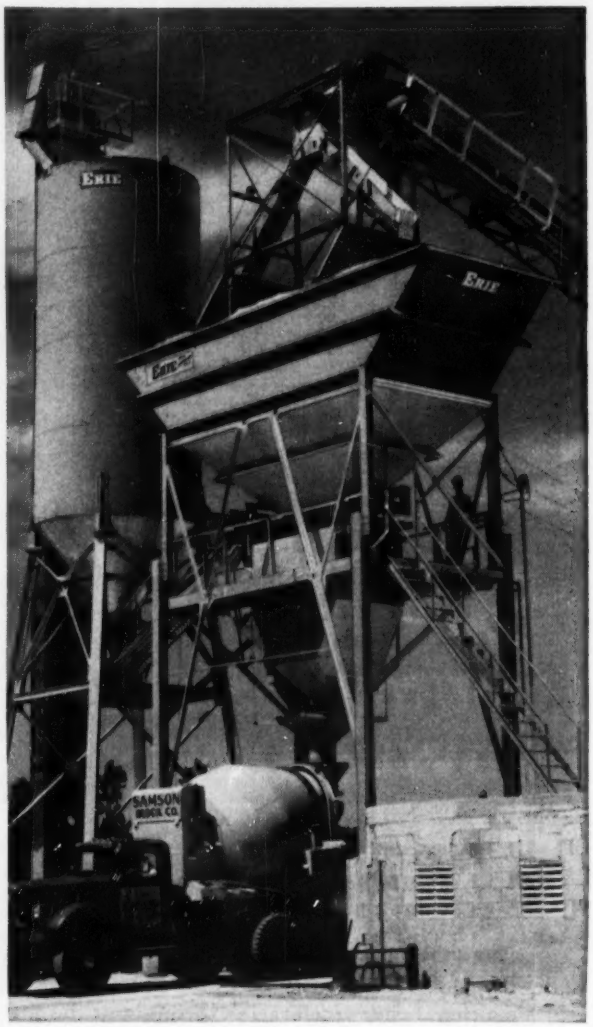
- - - MURRAY LEVINE

At Homestead, in the bustling Miami area, is one of Florida's best equipped concrete batching plants. It's the Samson Block Co., and it's the property of brothers Sam and Murray Levine.

The Levines launched themselves into this new venture seven years ago on a rather simple premise: "Make it good."

With quality as the keynote of production, Samson blocks have been accepted in greatly increasing volume year after year. It was inevitable that they should one day expand into the ready-mixed concrete field.

When they did, quite naturally, they shopped for equipment that would do the best job for them. They chose Erie. Here's why, in their words: "To manufacture quality concrete it takes not only skillful help and quality materials but the best equipment is needed, too."



One man operating this equipment produces 240 cu. yds. of specification concrete per hour. Installation includes: 3-compartment GTB-79 portable Aggre-Meter; BWC 4 cu. yd. weighing batcher; CSB 592 bbl. circular cement silo and DWK 36-cu. ft. cemeter. Sold by Neff Thomas Machinery Inc., Miami, Florida.

If you would like additional information on Erie equipment, write Dept. R93

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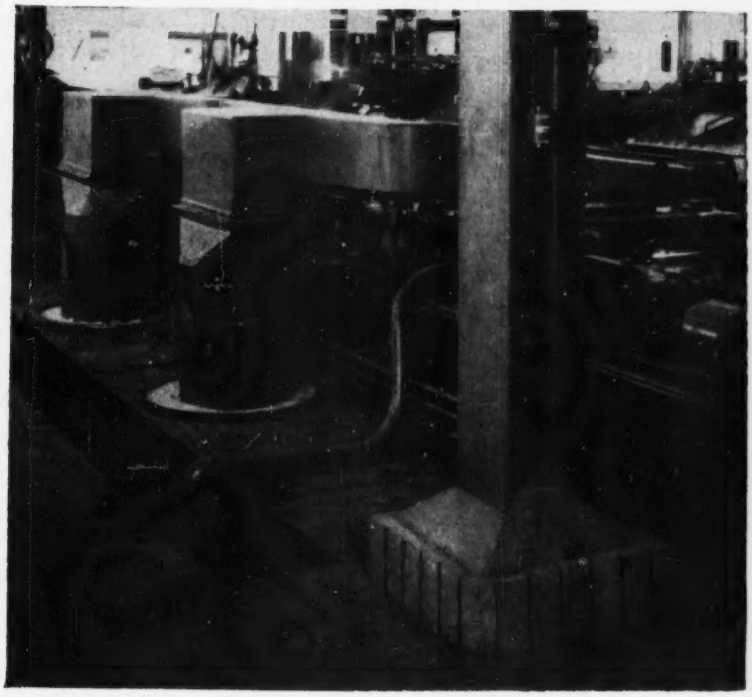
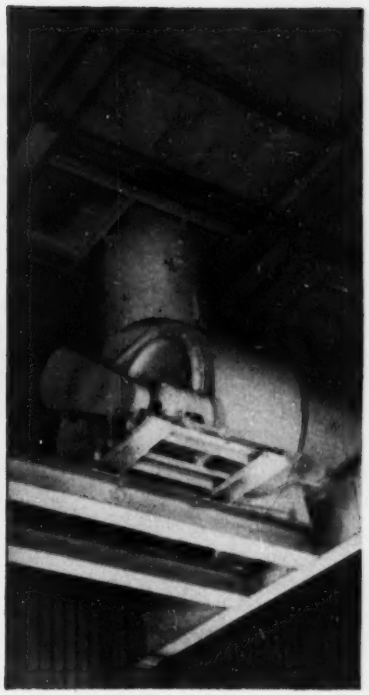


MASONRY FLOOR AND FUME EXHAUST SYSTEM incorporate acid and alkali-resistant materials. Acid and alkali fumes are drawn off processing tanks into specially lined underground ducts.



EXHAUST DUCTS and fans at roof are given inner and outer coatings of corrosion-resistant paint.

Corrosion-resistant materials used widely in electroplating plant

Masonry, paints, and cements, chosen for their anti-corrosive properties, have been used to advantage in Westinghouse's new $640,000-electroplating plant in Pittsburgh, Pa. The plant provides facilities for plating copper, cadmium, zinc, nickel and tin parts. In designing the structure, particular attention had to be given to the corrosive effects of the acids and alkalis used in the plating processes, and the fumes given off from the tanks containing these chemicals.

• **Tiles**—All four outer walls of the 200x90-ft, steel frame building consist of corrosion-resistant, salt-glazed tile to a height of six feet. Above, for the upper 18 ft of wall height, are horizontal bands of blue-tinted corrugated glass and sheets of corrugated asbestos cement.

The roof is composed of a lightweight, wire-reinforced, hydrous calcium silicate insulating tile, overlaid with asphalt-cemented roofing felt.

• **Bricks and cements**—The entire plant floor is composed of a dense, red shale, acid-resistant brick, but two different kinds of cement were employed in place of portland-cement mortar for the brick joints. In all floor areas, except those where nitric and chromic acid are used, furane, resin-based cement formed the joints for the brick floor. The furane cement is resistant to almost all commercial acids, alkalis, salts and solvents. It will withstand temperatures up to 350 F.

In areas where there are severe concentrations of nitric and chromic acids a sodium silicate cement was used for the floor brick joints.

The floor brick was laid on a ¼-in. layer of dense, high-temperature, asphaltic compound, resistant to acids and alkalis, which in turn had been placed on a primed concrete slab over ground.

• **Underground ducts**—A down-draft—up-draft exhaust system is connected to every tank containing acid or alkali solutions. Fumes from most tanks are drawn down through the floor by individual vents and emptied into a network of terra-cotta-lined underground ducts, which are relatively cold. As a result, moisture in the fumes condenses and flows into the plant sewer system, while the air carrying the fumes is exhausted through roof vents. Vent traps at the points where the underground ducts empty into the sewer system prevent sewer gas or fumes from being exhausted through the roof vents.

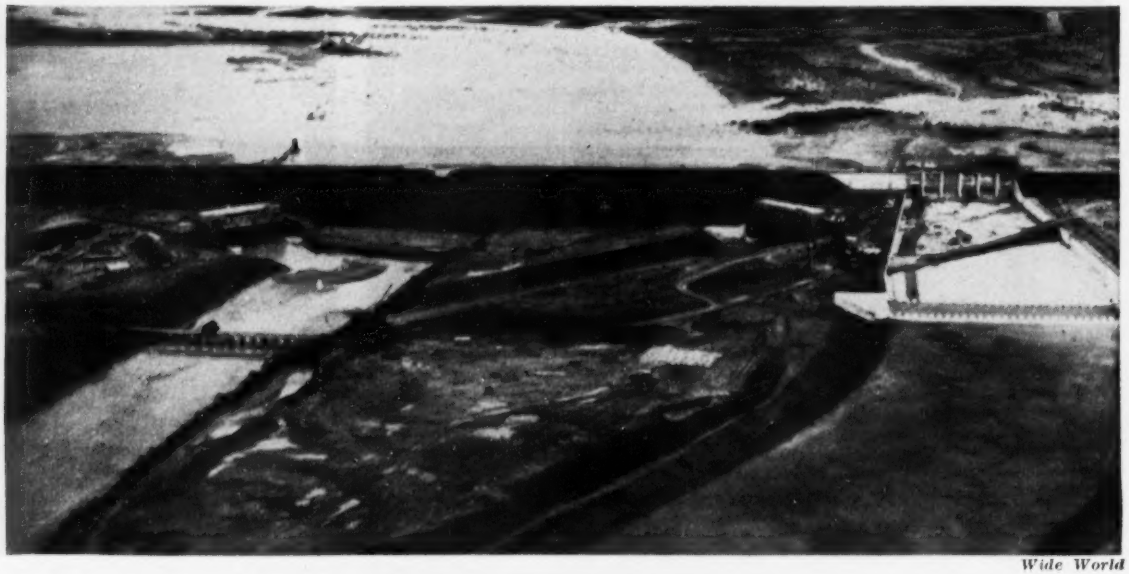
• **A coated exhaust system**—Exhaust fans and ducts handling corrosive fumes in the plant received various coatings of protective paints. Those ducts exhausting nitrous and nitric acid fumes were treated in three steps: (1) They were sand-blasted to be absolutely free of any foreign matter; (2) heated to the same temperature as molten vinyl plastisol; and (3) dipped into this flexible and inert plastic. Fans removing nitrous and nitric acid fumes are rubber lined and their blades rubber coated.

Ducts exhausting other corrosive fumes were first sand-blasted and then sprayed with a rubber paint. The fans for exhausting these fumes and the fans for general ventilation in the plant were made of a protected metal and covered with an asphalt-coated felt applied under high pressure. Their blades received a coating of neoprene rubber. There are eight general exhaust fans in the plant capable of removing over half the air in the plant in one minute.

Corrosion-resistant paints were used throughout the building. Air louvers in the north and south end of the building were given a coating of black graphite paint to guard against both chemical and atmospheric corrosion.

Contractor for the plant was the John F. Casey Co. of Pittsburgh.

ENGINEERING NEWS-PICTURES



Wide World

ENR photo by Compton

DOUBLE JOB

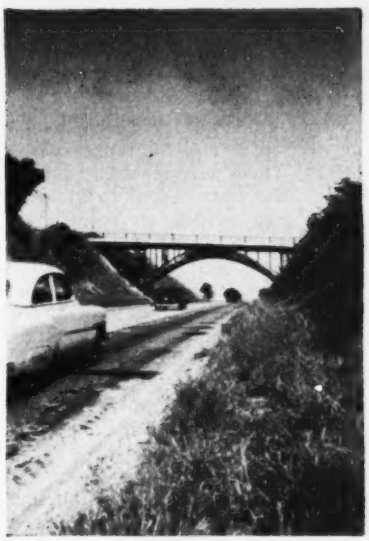
The Presidents of Mexico and the United States joined hands and voices this week to dedicate the $47-million Falcon Dam—built by the two countries, in two languages—to control flood waters of the Rio Grande below Laredo, Texas. The 26,290-ft compacted rolled earthfill structure (ENR May 15, 1952, p. 62) will have a capacity of 4,085,000 acre ft, of which nearly half will go for power production, half for flood storage. Built for the International Boundary and Water Commission, the joint undertaking will provide equal power (three 16,500-kw generating units) for each country.

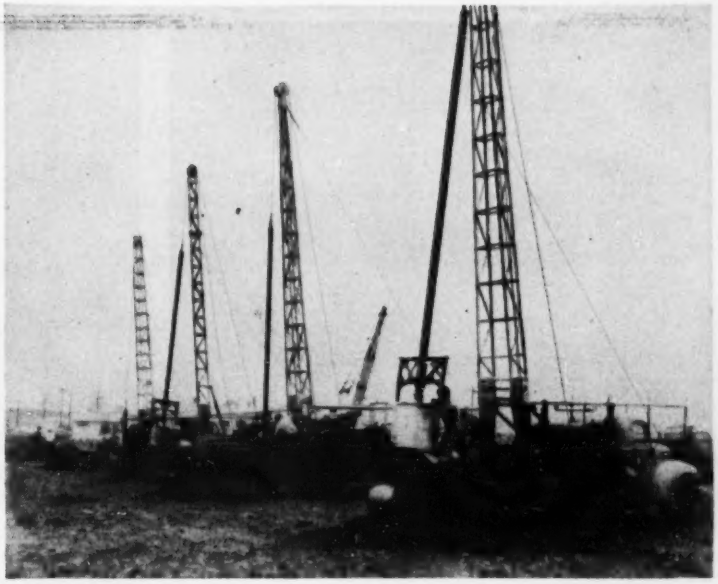
CAMPUS ON THE EL

This month in New York City The Cooper Union celebrates the cornerstone centennal of its Foundation Building—oldest U. S. building supported by rolled structural beams. Cooper Union was founded by farsighted Peter Cooper (steel-master, inventor, philanthropist). The $650,000-building was constructed with an eye to the future. It was the city's first semi-fireproof structure. Its Great Hall, where Lincoln delivered his 1860 "Right is Might" speech, was the country's first ventilated auditorium, with air being driven up through the floor by a steam-driven fan. And a circular shaft built from bottom to top floor anticipated the day of elevator devices.

TOO BEAUTIFUL

This bridge, west of Omaha, would be too attractive if painted as some Nebraska beauty lovers would like—so much so that it would become a traffic menace. So the bridge will be painted a drab black, to keep it from distracting passing motorists. The bridge, winner of its class in the 1937 American Institute of Steel Construction design competition, crosses Dodge Road, one of Nebraska's most heavily traveled highways. The new color—or lack of it—was recommended by the Nebraska State Highway Department.





FAST FOOTINGS

Drilling and under-reaming (above), popular in the Southwest and Pacific Coast states as a money-saving approach to concrete speed-footing construction, progresses at quadruple speed in Los Angeles as these four rigs penetrate 35 ft of refuse fill. Where refuse tends to cave, tamped-in sandy soil reinforces the hole for re-drilling and subsequent concreting. Sixty-seven footings are in the project, a factory under construction by MacIsaac and Menke Co., Los Angeles. Building's designer is Kenneth H. Neptune, Beverly Hills.

EXPRESSWAY FOR HAWAII

Work is under way (below) on two links of a $30-million, 7-mi long, controlled access expressway—Hawaii's first—across Honolulu. Here it knifes across the Hawaiian landscape toward Punchbowl Crater (in background) a National Cemetery for World War II dead. The expressway—to be completed in 15 years—is designed to have a 12-ft median strip and be free of utility poles except for tall central standards supporting mercury vapor lamps. Bids for the third section of the road will be called next month.

BREAK in 30-in. dia penstock caused by water hammer due to a needle valve failure required fast repairs at a high Sierra hydro plant in California.

ENR staff photos

DAMAGED SECTION was cut out of the pipe as an expedient rather than remove entire lengths of the penstock. Repair materials had to be hauled in by pack animals.

Quick repairs for penstock put hydro plant back on line

A mid-July needle valve failure at a high-head hydroelectric plant in California flooded the plant and caused water hammer that ruptured the steel penstock in three places. Quick reconditioning of plant equipment and unusual penstock repairs enabled California Electric Power Co. to put the damaged Poole Plant back in service after only 34 days.

The plant is located on the eastern slope of the Sierra Nevada near Yosemite National Park. A 3,740-ft long steel penstock provides a 1,531-ft head on a turbine that drives a 10,000-kw generator.

The needle valve failure was due to fatigue in the needle stem. Vibration of the needle due to an off center tip had been detected and repaired in early spring.

But, in an attempt to get the plant back into service before reservoir water spilled, a new needle stem was spliced on rather than to replace the entire assembly. The mid-July break occurred adjacent to the splice in metal that had been subjected to fatigue stresses when the needle was vibrating.

The broken needle first instantaneously stopped the water flow causing water hammer that broke the penstock.

Then the water pressure forced out the broken needle and the plant was flooded.

The biggest breaks were 800 and 1,150 ft above the plant. A smaller break was close to the top of the penstock.

Swift repairs were desired to get the plant back into service and make fullest use of available water. But the penstock was almost inaccessible. To replace major sections of the line would have involved considerable delay in getting sections fabricated and in building an access tramway to the points of rupture. Thus, it was decided to cut out the smallest practicable section at each of the two large breaks. These were replaced by welding in new plate curved to fit. Butt straps were welded on to reinforce each weld.

WELDER completes weld on butt straps that reinforce welds holding new sections. Plant was out of service only 34 days.

A trail was built to the break points and repair materials hauled in by pack animals. Even so, the repair plates had to be cut in two because of the limited carrying capacity of the pack mules.

At the large breaks, the penstock is 30-in. dia with $\frac{3}{8}$-in. and 11/16-in. thicknesses. At each place a 72-in. long section measuring 30-in. circumferentially was cut out of the line. Back up straps, 3/16 in. by 2 in., were welded around the openings to hold the new plates in position and provide full penetration welds.

After the new plates were welded in place, 4-in. wide butt straps rolled to shape were welded over. These straps are $\frac{3}{8}$ in. thick for circumferential points and $\frac{5}{8}$ in. thick for longitudinal joints.

• **Some work still to be done**—All of this welding on the big breaks was electric with cables running down hill to a 200 amp welding machine at the power plant. The smaller break was not accessible to electric equipment. It was welded with oxyacetylene equipment and a plate placed over for reinforcement. A small leak still exists at this point.

With these expedients and with fast work on the power plant cleanup, the unit was back in operation in the aforementioned 34 days. Some minor leaks indicate additional repair work will be necessary, but this can be accomplished after the 1953 water season.

The fittings that revolutionized pipe welding . . .

In the year 1931 Taylor Forge gave industry its *first real line* of seamless, butt-welding pipe fittings. We say it was the first *real* line because it was the first to include not only long and short radius ells, but also full branch and reducing tees, concentric and eccentric reducers, stub ends, caps and welding neck flanges.

This was a fully planned development. Many years before Taylor Forge had foreseen the future of the butt-welding fitting . . . had realized that pipe welding could not go beyond its then crude stage until pipe users were given *all* the fittings necessary to make up complete piping systems.

So Taylor Forge went to work on this and after long research and development came out with the full line that became the inspiration of modern pipe welding.

Naturally the organization that started ahead has kept ahead . . . in design, in quality, in breadth of line. That is why so many men who have followed the development of the WeldELL line, refuse to consider any other kind of welding fittings.

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How New York's Skyline is marked out with BERGER TRANSITS

Name an important New York skyscraper built in the last 40 years. Chances are Earl B. Lovell-S. P. Belcher, Inc., New York's leading title company surveyors, did the Title and construction surveying – *using Berger Instruments exclusively.* The United Nations Building, Lever House, Empire State, Chrysler East and Look Buildings – to name a few.

"Very little margin for closure error here," says R. M. Holahan, the company's Chief of Field Parties, "no more than is consistent with the world's highest property values involved." And that means accuracy like this –

"Error of starting base lines, on which accuracy of all subsequent work depends, must be almost infinitesimal."

"No work can be more than 1/10" from correct position in marking out building lines; maximum variation 1/8" over entire lot."

"Horizontal alignment of base plates for steel framework must be within a maximum error of 1/8" on any one steel span."

All this under most difficult surveying conditions: where traverse around a piece of property, often entirely occupied by buildings, must be over roofs of varying heights. Where the engineer must, on a new building, lay out foundations – align steel framework story-by-story – establish lines for exterior masonry walls – make final enclosure survey of completed building.

E. F. Sullivan, Lovell-Belcher engineer, behind a new Berger 6¼ R Transit.

"We use only Berger Instruments because they are the only transits that have given us the consistently accurate results our type of surveys demands," says Mr. Holahan.

"When we get on a point, we know it's there and not an 1/8" away. We like the way it focuses on close distances, its sensitive bubble. The plates and verniers read close and are consistent with the power of the telescope. We have no trouble with tight screws or telescope focusing in cold weather."

Such accuracy in action is one of the many important reasons why so many leading engineers buy only Berger.

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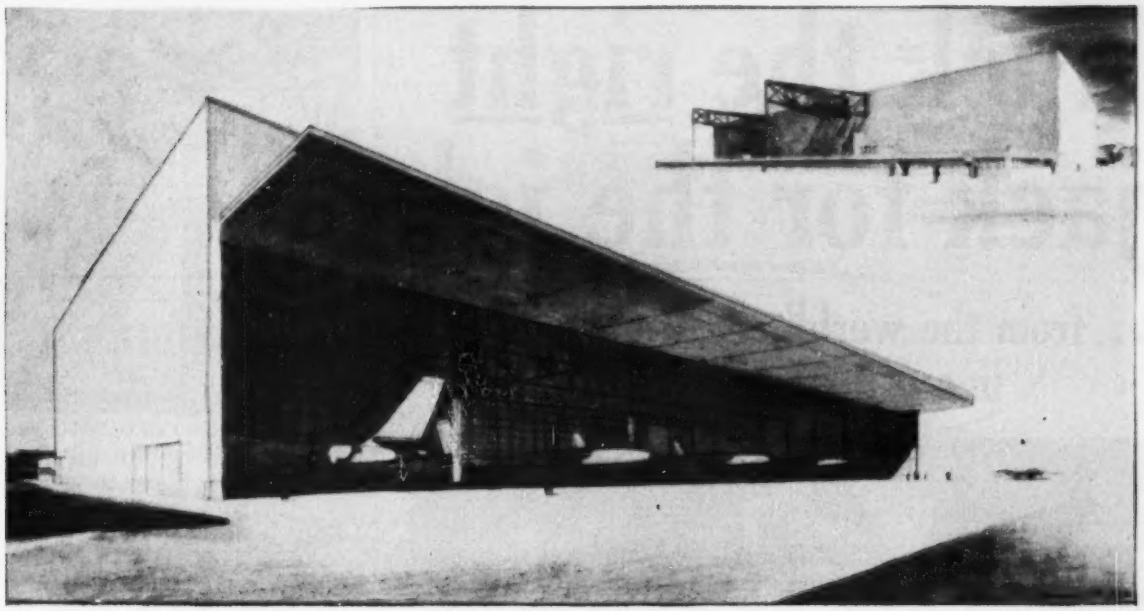


FLIGHT TEST HANGAR, in Seattle, Wash., will have the largest unobstructed doorway in the country. The roof is carried on cantilevered steel roof trusses supported on only two large compression columns inside the hangar and tied down at the rear by two vertical tension members.

Four acres of roof—but only two columns inside

Two steel columns are the only obstruction in a hangar large enough to house four Boeing B-52 Stratofortresses. The 780x200-ft flight test hangar will be completed in October for Boeing Airplane Co. in Seattle.

Primarily, the hangar roof is carried by two steel cantilever trusses at the third points of its 780-ft length. The interior supports of these two cantilevers are the two steel columns inside the hangar. The columns, set 122 ft back from the entrance to the $5.6-million hangar, are capable of supporting 2,500 tons each.

• **Cantilever tie**—Exposed for 75 ft at the rear of the hangar, the ends of the cantilever trusses are tied down to concrete anchor blocks by 90-ft long vertical steel tension members. Each of these 408-cu yd anchor blocks resists an upward pull of 425 tons.

The opposite ends of the 279-ft long cantilevers project 122 ft from the interior columns to the front of the hangar.

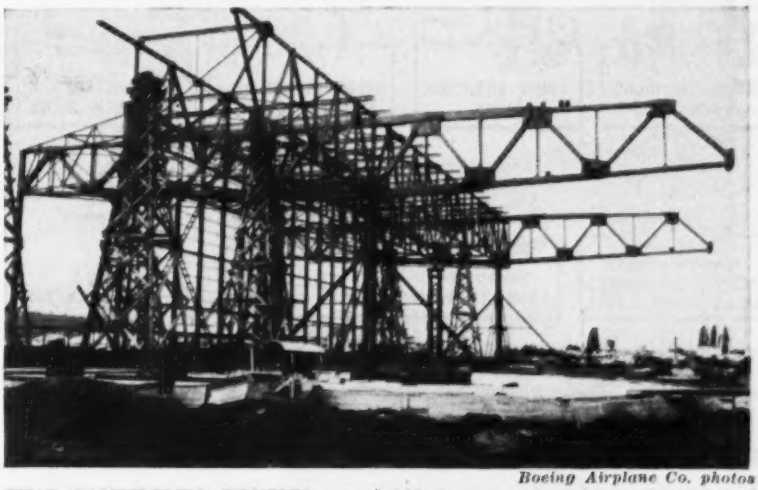
The space at the rear of the hangar, under the exposed ends of the main trusses, is occupied by a low, one-story office and shop building.

• **Biggest door**—What may be the world's biggest unobstructed doorway —780 ft long and 65 ft high—will open onto the flight apron at the front of the hangar. Into it will be fitted 13 vertical-lift canopy doors, each 60 ft wide and 65 ft high. Each door will be divided into two sections of which the lower slides up behind the upper when raised and both swing outward at right angles to the front of the hangar.

In constructing the hangar, the contractor set the main columns first. Erection of the main trusses back to the vertical ties was then carried out with the aid of false work. When the ties had been placed, the cantilevers were extended to the front of the hangar. Erection of the secondary roof trusses proceeded along with the placing of the steelframed walls.

• **Piles and slabs**—Foundations for the hangar rest on more than 1,000 wood piles. The main-column foundations inside the hanger are heavy concrete slabs 30 ft long by 27 ft 6 in. wide, each resting on 132 wood piles.

A section of the concrete floor at one end of the hanger is a static test slab 195x150 ft in area and from 2 to 3 ft thick. Embedded on the surface of this heavily reinforced slab are 4,000 ft of 12-in. channels on 6-ft centers. These will be used to tie down equipment and aircraft during testing.



Boeing Airplane Co. photos

TWO CANTILEVER TRUSSES extend 122 ft past main columns (center) and 157 ft back to vertical ties (left). In foreground is 2 to 3-ft thick static-test slab on which planes will be tied down for structural testing.

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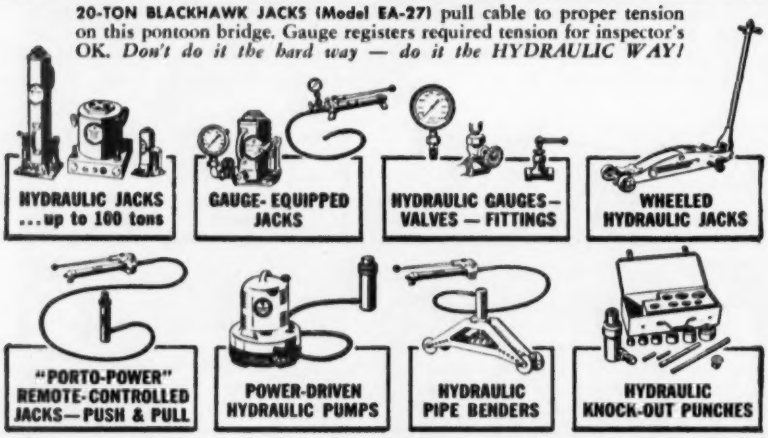
...from the world's most complete line of hydraulic jacks

20-TON BLACKHAWK JACKS (Model EA-27) pull cable to proper tension on this pontoon bridge. Gauge registers required tension for inspector's OK. *Don't do it the hard way — do it the HYDRAULIC WAY!*



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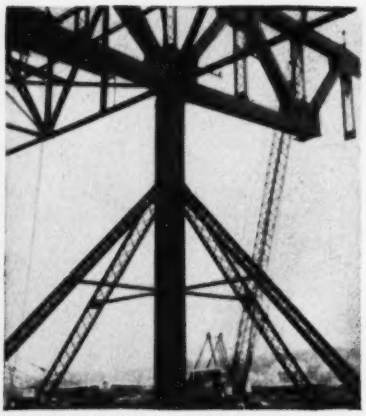


COMPRESSION COLUMNS were erected first and braced temporarily.

VERTICAL TIES for two cantilever trusses were erected after main columns.

The rest of the hangar floor is 13-in. thick concrete, sloping in various areas to more than 30 large floor drains. Together these drains can discharge 400,000 gal of water in 90 min in the event of fire.

The lower walls of the hangar and the walls of the shop office section are precast concrete slabs. The upper walls of the hangar are made of corrugated galvanized sheet steel. The hangar roof is ribbed steel deck insulated with glass fiber and covered with builtup roofing.

John W. Maloney, architect of Seattle, designed the hangar from original plans by the Boeing Plant Facilities Division. W. H. Witt Co. is the structural engineer, and Lincoln Bouillon and Associates, the mechanical and electrical engineer—both Seattle firms.

The American Bridge Division of U. S. Steel Corp. is the steel contractor. Howard S. Wright and Co., of Seattle, is the general contractor.

The project is being directed for Boeing by its plant facilities division under R. E. Braley, chief, contract construction, John R. Taylor, major project engineer and R. P. Hutchinson, construction engineer.

No detail of planning was overlooked in making this new Youth Study Center one of the finest of its kind. Reinforced concrete was selected for the building's framing and floors.

The design includes flat wide beams which span the full width of the building. This framing method permitted a considerable reduction in the total height of the building as compared with conventional deep beams.

Not only did reinforced concrete permit greater flexibility of design, but it also proved *more economical*. Moreover, materials were readily available from local sources.

Reinforced concrete buildings are durable, firesafe, rugged . . . and *go up faster*. On your next job, design for reinforced concrete.

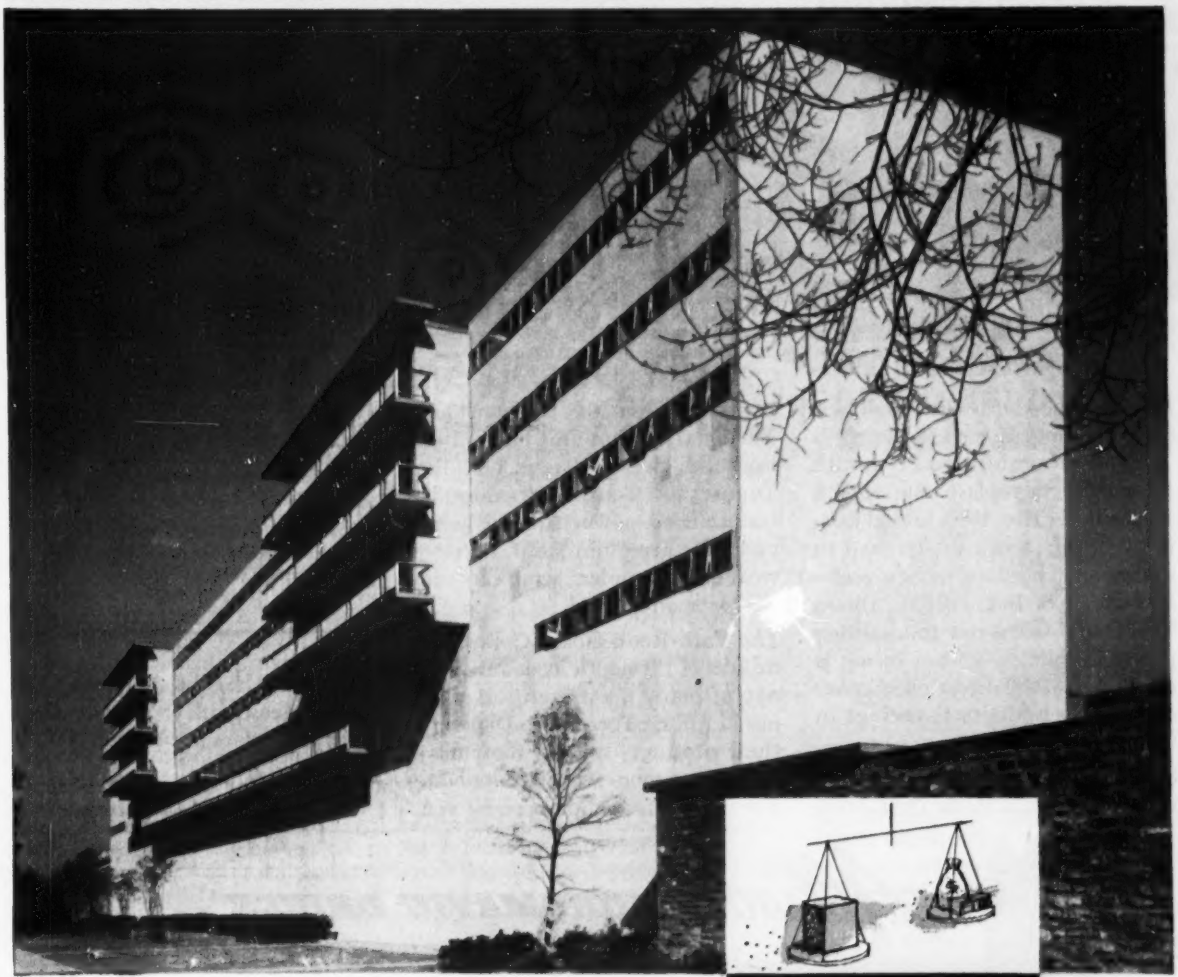
Youth Study Center, Philadelphia, Pa.

Architects: Carroll, Grisdale & Van Alen

Structural Engineers: Severud-Elstad-Krueger

Contractor: McCloskey & Co.

REINFORCED CONCRETE PROVED LESS COSTLY



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Saving $1600 a year

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Model MDT Plymouth locomotive pulling a 320-ton steam locomotive to the scrap heap. This 35-ton locomotive is equipped with an Allison TORQMATIC Converter which smoothly transmits power from a 220 h.p. Diesel engine.

In September 1951, Pittsburgh Ferrous Products Company bought a TORQMATIC-equipped Plymouth locomotive to replace one with a mechanical drive. With his old locomotive, this scrap dealer had to replace clutches four times a year—at $400 each. But with an Allison TORQMATIC Converter transmitting power in the new unit—*a saving is effected of $1600 a year on clutches alone*, plus additional savings in labor and availability.

Since it was delivered, this locomotive has worked more than 4000 hours with absolutely no down time. The small 35-ton unit has pulled loads as high as 1400 tons. With the TORQMATIC Converter smoothly transmitting power, sudden jerks and jolts are eliminated, cutting wear on car couplers, scrap cars and the locomotive itself.

The Fate-Root-Heath Company, makers of Plymouth locomotives, is one of many manufacturers who install Allison TORQMATIC DRIVES in their products to help their customers get more work at less cost. For more information on how you can cut your heavy-duty equipment operating costs, ask your equipment dealer, manufacturer or write:

ALLISON TORQMATIC CONVERTER

SIMPLE DESIGN—one-piece cast converter elements—minimum maintenance

COMPACTNESS simplifies installation

DESIGNED for power applications in the 75 to 400 h.p. range

LONGER EQUIPMENT LIFE—absorbs shock, eliminates engine lugging, cuts maintenance costs

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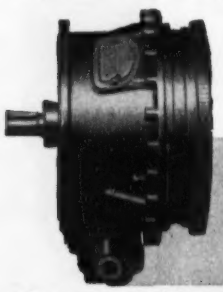

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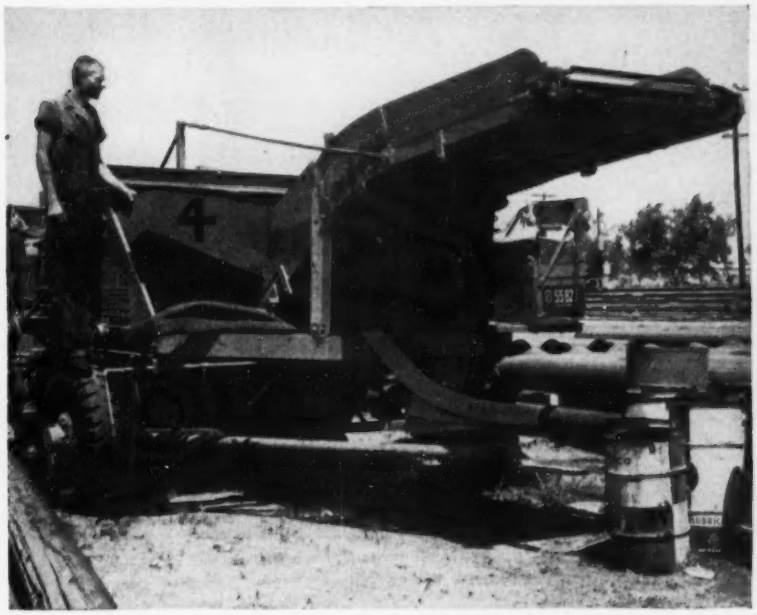

GOTTLIEB Pfister, shop crewman, on the Elgin sweeper that was converted for leaf pick-up. Towed by loading truck, sweeper's engine operates brooms and belt only.

Fresno shop crew improvises—revamped machines ease work

The farmer's knack for rebuilding equipment to do a better job has caught on in the municipal shop of Fresno, Calif., the seat of one of the richest agricultural counties in the United States.

How many road crews out ripping up pavement have had the job slowed down because of their inability to raise machine ripping teeth out of the roadbed fast enough manually to clear manhole head castings?

• **Revamp grader**—Andy Heitzenrader, the city shop superintendent, said his men had that trouble until they redesigned a Haynes grader so they could raise the teeth hydraulically. He said the power for the hydraulic system comes from a 12-volt circuit off the TD18 International tracklayer used to pull the ripper. Since the pilot model was built, more than a year ago, two others have been constructed and are now in operation.

• **"Leaf-picker-upper"**—Having been bitten by the expediency bug, the shop crew went to work. They pooled their collective talents with an eye toward disposing of the mountain of leaves, the plague of every municipal autumn clean-up program.

The basic unit in the new project was an old Elgin sweeper which they converted into what the shopmen, for lack of a better name, call a "leaf-picker-upper".

A conveyor belt was constructed to carry the leaves from the brushes to a truck that serves a dual purpose by pulling the picker-upper. Heitzenrader claims the three-man crew operating the machine does a faster job than was possible under the old system of sweeping the leaves and loading them by hand.

• **Trucks with winches**—Now the boys really were cooking—they looked for other ways of expediting manual tasks. Cleaning barnacles out of sewers—a hand operation until a shopman thought of pulling brushes through the lines with a winch—led to the modification of several city 1½-ton trucks. Winches were installed for block by block sewer brushing.

• **and trucks with covers**—Fresno garbage trucks were equipped with aluminum canopies fabricated in the

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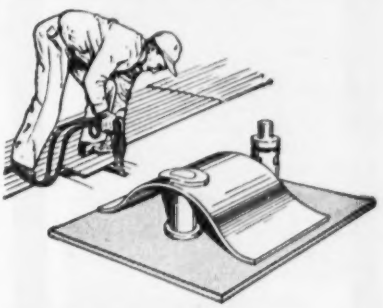

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PFISTER AGAIN on one of the city's pavement rippers altered by the shop crew so that the ripping gear can be raised or lowered by its own hydraulic system.

shop, and cleaner street conditions prevail.

Being handy with shop equipment isn't all that helps Fresno (pop. 92,000) says Heitzenrader. His department operates 168 hours a week —24 hours a day every day.

"And we're saving money doing it," he comments. "We maintain our equipment at night when there's less disturbance and the men do a better job. Our overhauling is done on weekends."

"We figure our equipment and men as a contractor does. When they're not working they're not making money. If you have to pull a piece of equipment off a job during the day for maintenance you're losing the time of the equipment and the time of the men. You're robbing Peter to pay Paul.

"We save man-hours and equipment-hours by working around the clock." He said he has 24 men on his crew.

Sand dredgers lose round—Toledo river front rezoned

Residents of homes fronting on the Maumee River in Toledo, Ohio, won the first round, last week, in their fight to bar sand dredgers from working the river bed in front of their property.

Despite predictions of dredging interests that elimination of the source of sand would result in a 15% increase in the price of concrete and a possible delay in construction of the Ohio Turnpike, the Toledo council approved rezoning the riverfront property to residential use.

Riverfront home-owners charge that the dredges have caused slippage of their property and have created smoke and noise nuisances. Dredgers' representatives blame the high lake level for the erosion, and question the jurisdiction of the city council, asserting that the west bank of the river is in Wood County and not a city problem.

Jersey town may get depot

It has been announced that Air Secretary Talbott "looks with extreme favor" on the establishment of a $73-million air maintenance depot at Hammonton, N. J.

The proposed site for the depot has been in question for about two years partly because of the expression of concern for the Hammonton ground water table by New Jersey's Governor Driscoll.

It is claimed that differences of opinion between the state administration and the Air Force will be adjusted amicably.

Southern cities woo plants-subsidization vs. free land

In a concerted endeavor to encourage industry to come to Nashville, Tenn., the city council has approved establishment of a seven-member committee to investigate the feasibility of

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Caterpillar uses Hyatts at vital load-carrying positions—transmission, final drive gear and pinions—and their superior performance has helped to build a world-wide reputation for the big yellow machines. Manufactured from select steels and subjected to the highest standards of quality control, Hyatts last longer under the heaviest loads—with a minimum of maintenance. They're built to be forgotten.

Take advantage of Caterpillar's experience. Make sure that Hyatt Bearings are in equipment you buy. And if you're a manufacturer, ask for the services of a Hyatt Sales-Engineer. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT ROLLER BEARINGS

appropriating funds for the water and public works departments to extend water and sewer mains into areas that might be developed commercially.

At the same meeting the body tried to induce the Crane Co. of Chicago to build its $26-million titanium plant at Nashville through subsidization of water and sewer main construction and the offer of a water-rate discount.

Crane, however, succumbed to the blandishments of Chattanooga when that city offered land to the Chicago firm for one dollar.

St Paul plans landfill—cooked garbage law blamed

With only $16,000 left in his 1953 garbage collection budget, Frank E. Marzitelli, St. Paul, Minn., commissioner of public works, has received approval from the city's council for an emergency appropriation of $350,000 with which to install new collection and landfill systems.

• **Cooking lags**—Formerly dependent upon farmer collectors to pick up and dispose of the home waste by hog feeding, St. Paul has a new problem, since the Minnesota State Legislature requires the cooking of such waste, and the resulting accumulation of unwanted garbage, has left the city with a critical disposal dilemma on its hands.

• **Landfill planned**—The appropriation is earmarked for the purchase of 17 compactor-type trucks for the collection operations, and a drag-line crane and a bull clam for landfill work.

These expenditures will account for approximately $150,000, and the balance of the emergency money will be used for operating costs for the rest of 1953 and the construction of a $14,000-building for storage and washing of the collection equipment.

Puerto Rican redevelopment: $3-million allocation ok'd

With the announcement by Albert M. Cole, administrator of the Housing and Home Finance Agency, that slum clearance and redevelopment allocations had been approved, 1,342 families occupying 1,015 dwelling units in Rio Piedras, Puerto Rico, anticipate a new mode of living.

The allocations, $2,238,700 in temporary loan funds and $1,021,700 in capital grants, will enable the Puerto Rico Housing Authority to transform 39 acres of sewerless slum into a predominantly residential area with ample

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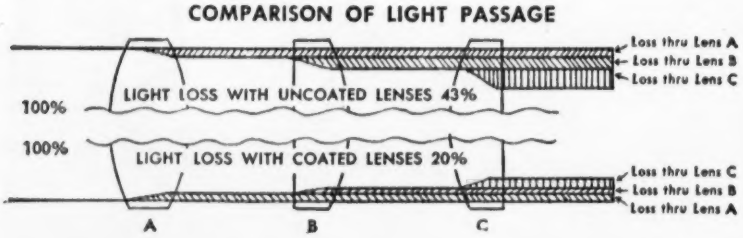
COMPARISON OF LIGHT PASSAGE



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recreational, educational, sanitary and commercial facilities in accord with the general plan of the city itself.

• **Polluelo venta?**—The existing buildings, none of which are served by sanitary or storm sewer systems, have only outdoor privies, and a mere 27% are equipped with indoor water lines.

The PRHA will acquire the project land, demolish existing structures and prepare the site for its new uses. The estimated gross project cost will be $2.8 million with the actual construction operations to run to about $1.5 million.

The majority of the families relocated during the project work will be accommodated in low-rent buildings, public housing-constructed under Title III of the Housing Act of 1949, and in private dwellings. The construction costs of relocation facilities will be taken out of insular funds.

Island development assured, Mobile to get vacationland

Development of historic Dauphin Island, near Mobile, Ala., was assured recently when Gov. Gordon Persons stipulated that the state would provide a $2-million roadway bridge as its link with the mainland.

The 24-ft-wide structure, sought by five state administrations since 1938, will be financed through the sale of recreational and residential lots to the public, and the investment of the proceeds in revenue bonds.

A non-profit organization will develop the 12-mile-long island into a vacation playground, constructing the bridge, necessary roads, public beach and park facilities.

Uncle Sam picks up check—

Uncle Sam pay for YOUR sewage disposal plant? Of course not—but it will happen at Clarksville, Va. Waters of the federally built John H. Kerr Dam on the Roanoke River have inundated the town's gravity-flow sewage disposal lines, and the United States has agreed to build a new system, its force supplied by five lift stations.

An agreement provides that the government pay costs of operating and maintaining the lift stations for a period of 30 years. It provides, also, that federal money be used for the construction of a sewage disposal plant.

Approximately $300,000 will be allocated for the project. Clarksville at present is without a disposal plant.

Simple 1-2-3 operation beats the five o'clock deadline

At the Symington-Gould Corporation, Depew, N. Y., extensive revisions are made on drawings of railway specialty equipment... and prints are ready for mailing to customers—hours, even days, ahead of the old schedule.

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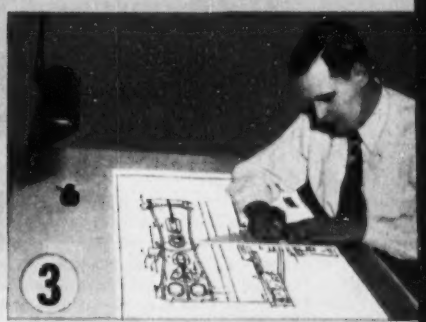
A basic drawing—which must be revised to meet the customer's specifications—is exposed on Repro-Negative Paper in a standard print-making machine; then the print is processed in standard photographic solutions. *An easy room light operation* that produces a negative photographic intermediate from the original drawing.

The draftsman obliterates the unwanted detail on the Kodagraph Repro-Negative print by simply applying opaquing ink. The way Symington-Gould figures it, when large areas must be revised . . . or many small scattered changes must be made, this is easier, faster than altering a positive print.



A positive Repro-Negative print is made from the corrected negative . . . on this the draftsman adds the new design . . . and a master is ready to produce the required number of prints. *Ready* in a fraction of the time required previously when the unchanged design was retraced in full.

These Kodagraph Materials also save Symington-Gould time and dollars

- Kodagraph Autopositive Paper is used to reclaim old, soiled drawings; to produce intermediates from customer-drawings on opaque stock.
- Kodagraph Contact Cloth is used to reproduce corrected negative prints when durable, inklike cloth intermediates are desired.
- Kodagraph Autopositive Cloth is used to reproduce new pencil drawings directly, which helps eliminate costly ink tracing.

NOTE: Kodagraph Autopositive Paper and Cloth are processed in the same easy manner as Repro-Negative Paper, but produce positives *directly* from the originals.

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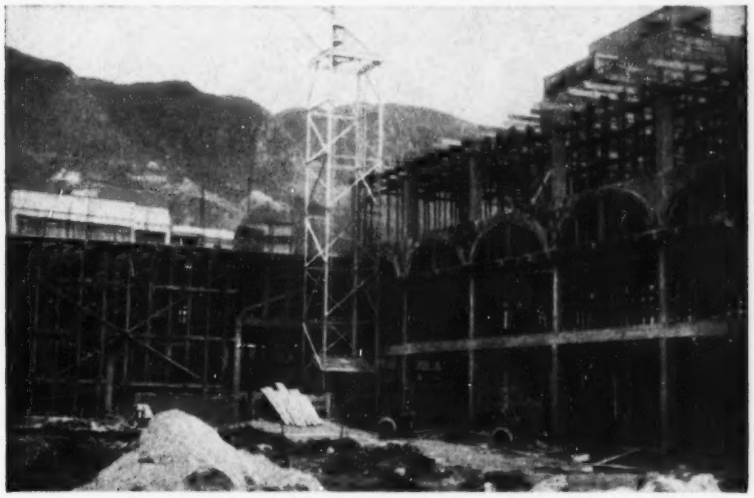

REINFORCED CONCRETE FRAME for three-story sections of commercial building will provide office and store space under glass block skylight roof.

Unusual office building going up in Colombia

What eventually will be the biggest commercial building in Bogota, Colombia, is being built in sections. The design and construction schedule of the reinforced concrete project incorporates some unusual planning.

When completed the building's five different sections will occupy four sides and the center of a city block. Three sections of the building—on three street fronts of the block—will be three-story office and store structures. At the moment these sections of the building are being completed.

Some time in the future, when the demand for office space becomes more urgent, the fourth side of the block will have an eleven-story office building built on it. In the center of the block, in what otherwise would be a patio, a rectangular one-story store with mezzanine will be built in the near future.

The planning of the one-story store, in the center of the higher buildings facing the street fronts, presented a difficult problem in daylighting and ventilation for the store. The solution lies in the design of the roofs of the three-story section now going up on three sides of the block.

The roof of the three-story section is composed of a series of vaults whose axes are perpendicular to the street front. The crown of each vault is completely open and consists only of a series of ribs placed at intervals in lieu of the arched vault crown which would ordinarily be there. Over this open crown of the vault, an arched skylight made of glass block runs the length of each vault. These skylights are open at each end to allow a maximum of air to move through the vault and the skylight. The light that comes through the skylight and open vault crown, and air that can blow through the vault provide supplementary daylighting and ventilation for the one-story store in the middle of the buildings. Architects and designers of the building are Esguerra, Saenz, Urdaneta, and Suarez of Bogota.

Congo's hydro potential world's biggest concentration

Four engineering groups have been created under the Belgian Congo's economic Ten Year Plan to study in detail the great hydroelectric potential of the country. The country, deep in the central African interior, has the greatest hydroelectric power potential in the world: With one third the territory of the U. S., Congo has an estimated potential of 180,000,000 kw as compared with the U. S.'s 104,000,000 kw.

Only 1% of the Congo's power has been developed, although a good part of the country's mining industry is

The Model RG is now available in 1,500- and 3,000-lb. capacities — other sizes will follow.

Advanced Guard for a New, Advanced Line

Here is a completely new ratchet lever hoist designed to bring you added safety and convenience. The Model RG incorporates the time-proved ratchet and pawl principle originated by Coffing — makes it hold positively at all times — no friction-type brake to slip or freeze—chain is free wheeling when not under load.

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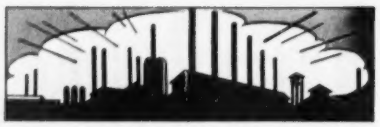

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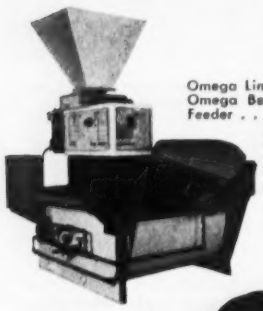
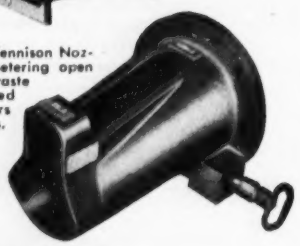
The typical steel mill waste problem involves neutralizing and metering acid pickle liquor. The practical answer to this problem can be worked out with your consulting engineer. He will show you how to make best use of B-I-F Industries Equipment . . . for waste neutralization . . . for flow metering . . . for low-cost, low-upkeep systems for handling all types of waste problems.



Omega Lime Slaker with Omega Belt Gravimetric Feeder . . . feeds quicklime, produces lime slurry, delivers solution for waste neutralization.



Builders Kennison Nozzle for metering open flow of waste discharged into sewers or streams.

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operated on hydroelectric power. The Congo River itself represents the greatest potential in the country. Flowing from Stanley Pool deep in the interior through a series of falls and rapids, the Congo River develops 114,000,000 kw potential in its 2,900-mile length. The potential of this one river is more than that of the whole U. S.

Steel and slag prefabs to boost Austrian housing

A one-and-a-half story pilot model house made of steel sheets and sections, and incorporating slag cement and precast slag blocks, is the latest venture toward the solution of Austria's housing shortage. The prefabricated house is being produced by a steel company in order to use its own products to provide low-cost homes for its employees.

Containing a living room, two bedrooms, kitchen, bath, and basement, the four or five-member family house has 780 sq ft of living space. The builders believe that, in mass production, the house will cost around $3,900, including the price of the plot.

Cold-formed steel sheet panels and structural sections form the roof of the house. The foundations are made of slag cement poured in place. The slag is a by-product of the company furnishing the steel. Walls are precast slag-cement panels, and window and door frames are cold-pressed from steel sheet. The structural basis of the first floor, over the basement, is made of cast slag stones and cold-rolled steel sections.

The manufacturer of the house, United Austrian Iron & Steel Co., in developing a cheaper production method for light, cold-rolled steel sections and sheet, built the steel prefab house.

World bank creates market for U. S. construction goods

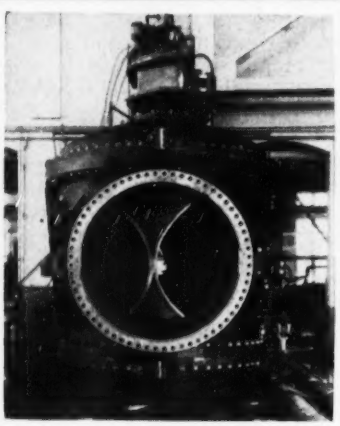
The eighth report of the International Bank for Reconstruction and Development (World Bank) dated June 30, 1953, brings up to date the far flung coverage of its loans. As of June 30, 1953, the World Bank had outstanding loans around the world aggregating $1,560 million for reconstruction, construction equipment and materials, and machinery basic to economic welfare.

Some 60% to 70% of this money is spent in the U. S. for construction equipment and materials, transportation and generating equipment and various types of machinery. In the year ended June 30, $226.8 million had been disbursed by the bank and of this total $144.1 million, or 64%, had been spent in the U. S. This country subscribes less than 30% of the funds which 54 nations put up for a total capital of $9,036 million.

Outstanding loans for the development of electric power come to $404 million, of which the largest chunk, $253 million, is in South America. Brazil, Chile, Colombia, El Salvador, Mexico, and Uruguay all have big shares of this money for hydro and thermal electric power plant construction. Southern Rhodesia and the Union of South Africa have also received substantial loans for the development of electric power. In August the Union of South Africa received another $30 million for electric power facilities.

Outstanding loans for highway construction and equipment amounted to $46 million, of which South America

(*Continued on page 62*)



LARGEST ROTOVALVE ever made is also one that can be taken apart for shipment. The valve, weighing 105 tons and having an 84-in. dia opening, is one of three for controlling irrigation flow at the Kajaki Dam, Afghanistan. To be shipped in pieces to the dam, the valve will make the last part of the journey by truck. S. Morgan Smith Co., York, Pa., made the valve to the order of Morrison-Knudsen of Boise, Idaho, who originally built the Kajaki Dam.

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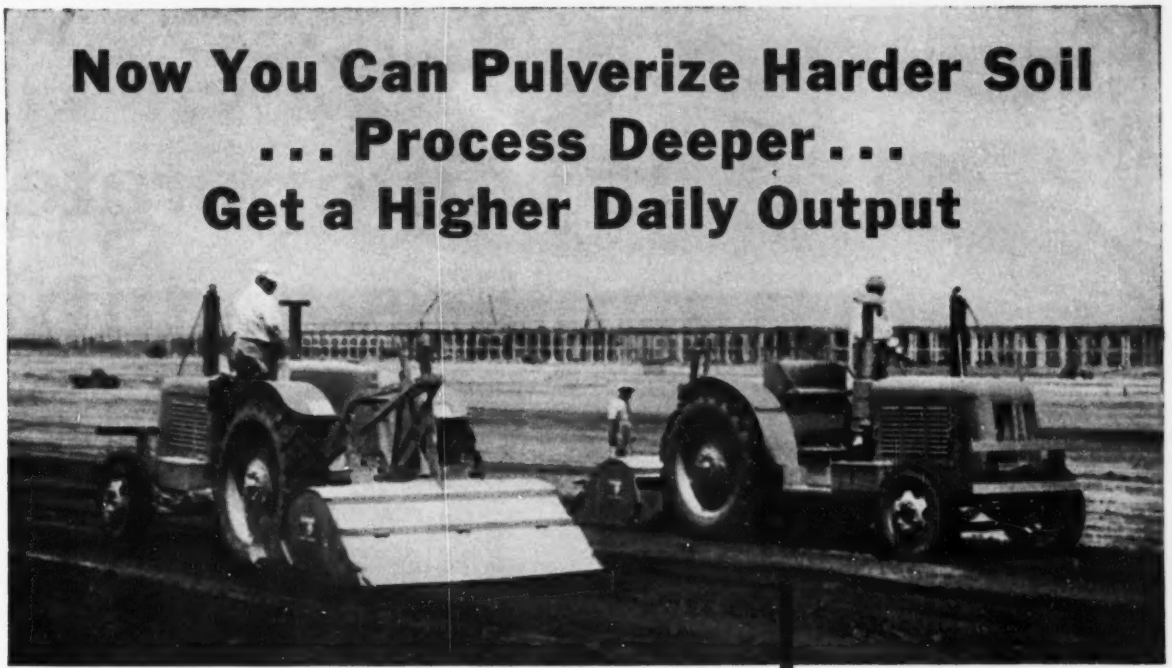

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NEW HEAVY-DUTY 1953 SEAMAN TRAV-L-PLANT

The *NEW* Seaman Self-Propelled TRAV-L-PLANT is built to convert tough, difficult deep stabilization or compaction projects into fast moving high production jobs. You can pulverize harder clods and mix deeper than with any other mix in-plant travel plant.

Further, the Seaman TRAV-L-PLANT answers the ever-present questions:

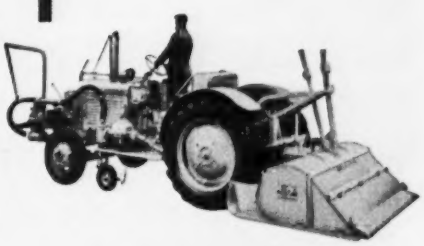
"What can I do if aggregates are not properly coated in one pass?"

"If my soil-cement mix is not up to specification in one pass?"

With the SEAMAN — if binders are developing unfavorable characteristics due to any one of many conditions beyond the control of the roadbuilder . . . if gradation of aggregates still needs correction — *just make another pass with the SEAMAN* — or as many as you need to bring the job to perfection. You can afford it — with plenty to spare — because multiple passes with the SEAMAN are fast and very low in cost.

And with the SEAMAN, you have an all-purpose machine for *every* type of stabilization — with every binder, every size of aggregate up to 5" and every recommended native soil. There's never a *partial* mix when you process, blend and finish with a SEAMAN. And the material is firmly placed with uniform depth and density — partially precompacted, blended and ready for finish rolling.

Two SEAMAN Self-Propelled MIXERS owned by Wright Contracting Co., at work on a portion of a large soil-cement project involving over one million square yards at the Albany (Ga.) Marine Depot.



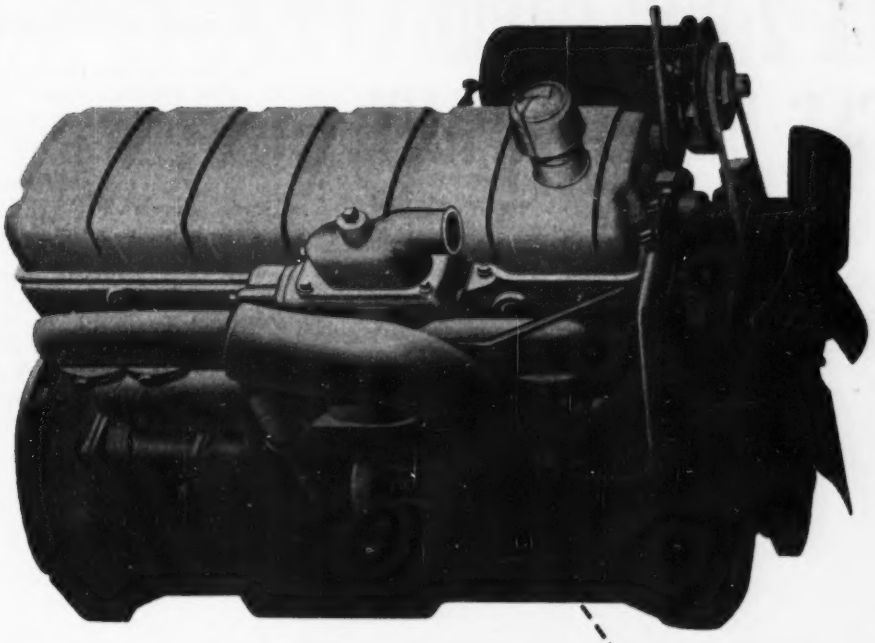
Send for this Bulletin completely describing the SEAMAN TRAV-L-PLANT and the Self-Propelled MIXER. Shows field scenes, operating hints and complete specifications.

SEAMAN MOTORS Inc.

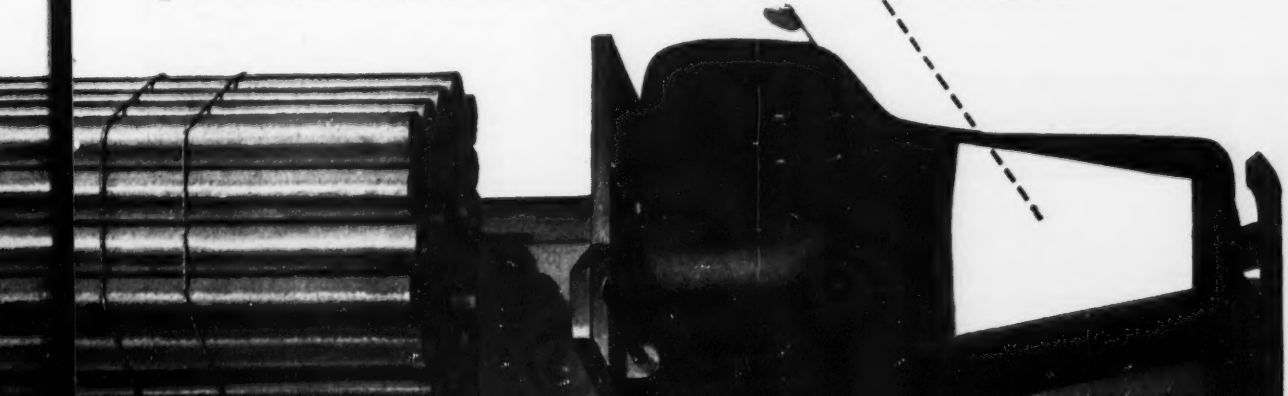
281 N. 25th St. • Milwaukee, Wis.

If you operate medium heavy-duty trucks ...

This new 150 h.p. diesel <u>now</u> makes Cummins



performance and economy available to you



CUMMINS

It's Cummins new Model JBS-600—ready to serve in the medium heavy-duty trucks produced by leading manufacturers. Ready to bring to this field the performance that has made Cummins the leader among high-output diesels. 150 h.p., the JBS-600 delivers full rated power for faster acceleration . . . for reserve stamina when the going is tough.

JBS-600 operators report more miles per gallon . . . lower fuel costs. This demonstrates the fact that Cummins' exclusive fuel and injection system—together with four-cycle operation and use of inexpensive Number 2 diesel fuel—naturally leads to savings on the job. The JBS-600 is ready to work profitably for you. It's Cummins-engineered for a long and useful life.

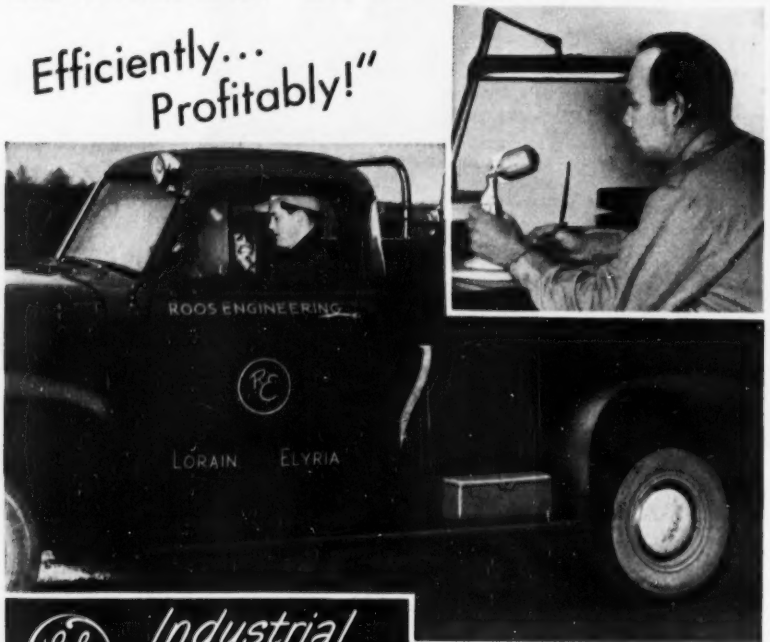
For all the facts—see your Cummins dealer!

Cummins® Engine Company, Inc. • Columbus, Indiana

Leaders in rugged, lightweight, high-speed diesel power

"G-E 2-WAY RADIO MANAGES OUR COMPANY...

Efficiently... Profitably!"



Industrial 2-WAY RADIO

PAUL J. ROOS, upper right, has frequent need to shift repair crews and equipment to cover emergencies. General Electric 2-way radio does this job efficiently *in seconds!*

Roos Excavating & Engineering Co. at Elyria, Ohio, refer to their G-E communication system as "the one tool we need on every job!" Actually, G-E 2-way radio serves them daily in a variety of ways. Extra equipment for a scheduled job is enroute almost the second it's needed. On a hurry-up call to repair underground gas storage tanks or blocked sewers radio speeds a work crew to the emergency scene. The result: Roos reputation for efficient service is tops . . . more jobs are handled . . . more profit realized!

Investigate General Electric Industrial 2-way radio today and apply its multiple benefits to your operation. Call the CAS* man at a local G-E office or write for information.

*Communications Advisory Service

Send for FREE Information!

General Electric Company, Section 2293-17
Electronics Park, Syracuse, New York

Please send information on how G-E 2-way radio can save me time, money!

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COMPANY .....

CITY ..... STATE .....

GENERAL ELECTRIC

and Australia have the largest amounts.

Port facilities, reconstruction and dredging tie up $20 million. The bombed harbors of Europe get most of this money.

Irrigation and flood control loans, amounting in all to $60 million have gone primarily to Asia and the Middle East, India, Thailand, and Iraq have received the largest share of this money.

Land improvement programs involving the purchase of construction equipment and materials have $19 million of the bank's money in various projects. Asia and the Middle East have received most of it.

International briefs . . .

• **Yugoslav hydro**—An international company has been formed in Geneva for the exploitation of Yugoslav hydroelectric potential (ENR June 4, 1953, p. 75). Austria, West Germany, Italy, and Yugoslavia, participating as equal partners in the venture called "YUGEL-Export", plan to incorporate the future electrical net into the Central European power grid. The most important feature of Yugoslav power is that winter stream flow is almost as large as summer flow, whereas in central Europe the severe winters in the water-heavy mountains practically stop winter stream flow. Present utilization of Yugoslav water power stands at only 3%.

• **Reclamation project in Japan**—Land-hungry Japan has instituted a $64-million program for the next ten years for the completion of reclamation now going on, and for executing a number of planned projects. The Agriculture-Forestry Ministry has asked Dutch experts to aid in the use of dike and pumping methods of dewatering land. Reclamation projects cover 27 localities and involve 44,000 acres.

• **Indian steel**—A German combine of the machine firm, Demag, and the Krupp Steel works of Essen has concluded, in the face of British and other competition, an agreement with India to build a $150-million steel plant. To have an initial capacity of a half-million tons, this will occupy a central place in India's five-year plan. The German firms will furnish $20 million of the cost of the plant.

• **Canadian concrete conference**—The University of Toronto will hold a conference on prestressed concrete in Toronto Jan. 28 and 29, 1954. Chairman C. F. Morrison, Professor of

WHAT ADVANTAGES DO YOU GET IN 4-WHEEL TRACTORS FOR SCRAPER OPERATION?

SINGLE AXLE PRIME MOVERS with overhung engines have some desirable features for scraper work or you wouldn't see them on many jobs. They may even outperform 4-wheel scraper tractors on an occasional job, but when you tally production and costs on all kinds of work for the life of the unit, the performance records of 4-wheel tractors tell the real story. Here are some of the factors to consider when you're comparing scrapers:

EXCELLENT MANEUVERABILITY

SAFETY AND STABILITY of the Euclid 4-wheel tractor permits full use of all the power and speed provided by the 275 h.p. engine and 10 speed transmission. Two axles assure positive steering and maximum safety under all road conditions and at any speed.

FAST, EASY LOADING is a feature of "Euc" scraper design. Cutting blade consists of 4 identical, reversible and adjustable sections providing the most efficient blade arrangement for any type of material. Short pull arms provide maximum rigidity of blade and entire scraper during loading. "Eucs" get more compacted loads and by actual scale weight carry more pounds of payload.

MANEUVERABILITY and ease of operation result from short wheel base of tractor, hydraulic booster steering, individual steering brakes on drive wheels and independent lever action control of all scraper operations. Complete 180° turn, non-stop, requires only 38'. . . less than many single axle tractor scrapers as shown in their specifications.

SAFE, FAST TRAVEL SPEED

JOB AVAILABILITY is especially important because of the heavy demands on tractors in scraper operation. "Eucs" have years of job proved performance with excellent accessibility of all working parts for servicing and maintenance. For example, service work on the entire drive axle and differential assembly of the Euclid tractor can be done without even removing a tire . . . in about one-fifth of the time required for similar work on single axle tractors. And there's no down time due to cable breakage either, because of Euclid lever action.

HAVE YOUR EUCLID DISTRIBUTOR give you complete specifications and performance data on Euclid 12 or 15.5 cu. yd. scrapers. He has a new folder, Form No. 502, that shows why "Euc" scrapers with 4-wheel tractors can out-perform all other scrapers of comparable size.

The EUCLID ROAD MACHINERY Co., Cleveland 17, Ohio

EUCLID (GREAT BRITAIN) LTD. • GLASGOW, SCOTLAND

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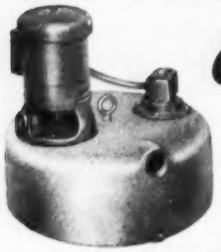
Euclid Equipment

FOR MOVING EARTH, ROCK, COAL AND ORE

LOW PRESSURE SYSTEM



Condensate Pumps

Capacities 500 to 10,000 sq. ft. E.D.R.

weil TVC PUMP

LOW RETURN CONNECTION

LOW SPEED, LONG LIFE

CAST IRON RECEIVER

LOW WATER LINE

ELECTRODE OR FLOAT SWITCH CONTROL

SINGLE UNIT—Fig. 302A
10 Gal. Receiver for Single Units
Diameter 21"
Hgt. of Return above floor 6⅞"

DUPLEX UNIT—Fig. 303B
15 Gal. Receiver
for Single or Duplex Units
Diameter 25½"
Hgt. of Return above floor 7 3/16"

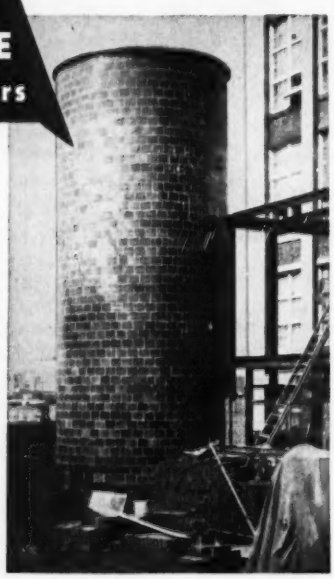
See Bulletin TVC-300-C for Full Specifications

TVC SELECTION TABLE

Unit Number	Max. Sq. Ft. E.D.R.	Discharge Pressure At Pump	G.P.M. From Radiation	Cap. of Pump	H.P. of Motor	Return Inlet	Pump Discharge	Dia. of Receiver	Height of Unit
TVC 13	500	20 lbs.	.25	1.0 GPM	1/4	2"	1"	21"	21"
TVC 19	750	20 lbs.	.38	1.5 GPM	1/4	2"	1"	21"	21"
TVC 23	1000	20 lbs.	.5	1.5 GPM	1/4	2"	1"	21"	21"
TVC 29	2000	20 lbs.	1.0	3.0 GPM	1/4	2"	1"	21"	21"
TVC 35	4000	20 lbs.	2.0	6.0 GPM	1/4	2"	1"	21"	21"
TVC 41	6000	20 lbs.	3.0	9.0 GPM	1/2	2"	1"	21"	23½"
TVC 47	8000	20 lbs.	4.0	12.0 GPM	1/2	2"	1"	25½"	23½"
TVC 52	10000	20 lbs.	5.0	15.0 GPM	3/4	2"	1"	25½"	27½"

weil PUMP CO. 1528 NORTH FREMONT ST., CHICAGO 22

MOST-SPECIFIED
FOR BULK STORAGE
by engineers and contractors



Kalamazoo

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- MADE FROM FINEST FIRE CLAY OBTAINABLE
- ECONOMICAL AND EASY TO ERECT
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INTERNATIONAL

Ciivl Engineering at Toronto, is preparing details of the conference. A great many papers by well-known U. S. and Canadian engineers will be presented.

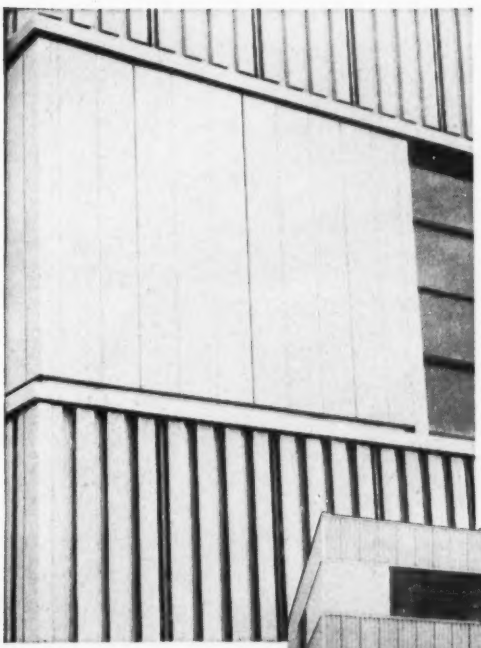
• **Colombian river bases**—The U. S. and Colombian navies are collaborating on the construction of three naval bases on the Meta River, hundreds of miles from the ocean. Aside from the allegedly strategic importance of bases thus far inland, the project will open up to commerce a huge area of the Colombian plains. Sites being studied are at Puerto Lopez, 80 miles southeast of Bogota, Orocue, 185 miles east of Bogota, and Puerto Carrno, at the eastern border of Colombia where the Meta flows into Venezuela's Orinoco River. River traffic will have to travel hundreds of miles up the Orinoco to reach the Meta River. Docks, drydocks, warehouses and railways will be built.

• **Congo airbases for defense**—Belgium and the Belgian Congo tentatively are planning a new airbase at Kamina in the southern part of the Congo. The airbase would protect the world's largest source of cobalt and industrial diamonds and the rapidly growing copper mining industry in Northern Rhodesia. Large new airports are planned for Elisabethville, Leopoldville and Stanleyville. In British East Africa airport construction is under way at Nairobi and Dar es Salaam.

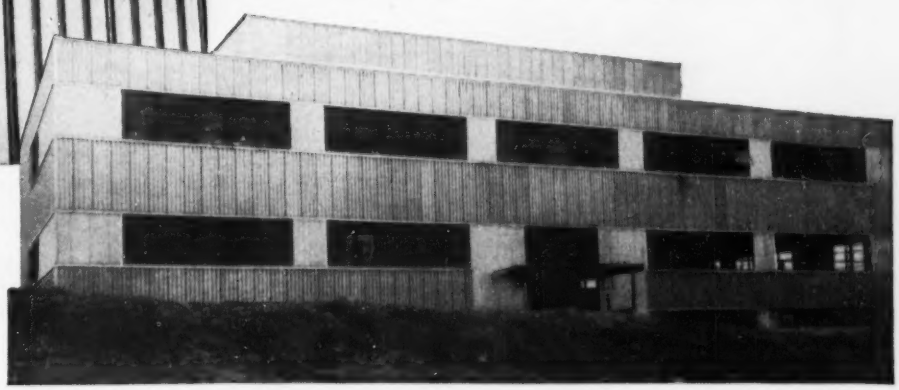
• **Lebanese power**—Electricity will be generated from ships moored in Beirut's harbor as a temporary solution to a severe power deficiency in that fast-growing port city. The Lebanese government is working out details of the plan with the U. S. Technical Cooperation Administration. In view of the necessity of electrical expansion, a group of Lebanese engineers has formed a company—to have a subscribed capital of $45 million—for the exploitation of Lebanon's hydroelectric potential.

• **Sicily bridge**—A meeting in Milan, Italy, in August favored the suspension bridge design for the historic Straits of Messina proposed by U. S. engineer, David B. Steinman (ENR Oct. 12, 1950, p. 31). The Sicilian government has agreed to appropriate funds for the geo-physical studies of the ocean bottom for the huge span which would link the Italian mainland with Sicily. The central span of the bridge would be more than 5,000 ft long, the longest in the world.

11,362 square foot exterior of this laboratory erected by 5 men in 25 days with Stainless Steel Panel Construction



CORNER AND WINDOW VIEW of the Laboratory showing how effectively the two types of panels are combined in this building.



TWO TYPES of Stainless Steel panels—fluted-face and flat-face—combine to give the Metallurgical Laboratory at United States Steel's Fairless Works an attractive exterior. Architect: Hoffman and Crumpton, Pittsburgh, Pa. General Contractor: Joseph R. Farrell, Inc., Philadelphia, Pa. Stainless Steel panels fabricated and erected by The H. H. Robertson Company, Pittsburgh.

ARCHITECTS and builders are finding Stainless Steel Panel Construction the answer for buildings that must have pleasing appearance, be easy and inexpensive to maintain, yet can be erected quickly in any weather.

One of the latest examples of this type of construction is the Metallurgical Laboratory at Fairless Works of United States Steel Corporation, Morrisville, Pa. A crew of five men and a foreman installed the 11,362 square feet of insulated Stainless Steel panels in 25 working days.

This type of construction can be carried out with Stainless Steel panels that are insulated or non-insulated, depending upon the purpose of the building. The low coefficient of thermal transmission of the insulated panels makes them particularly efficient in regard to heating and air conditioning costs.

If you are interested in Stainless Steel Panel Construction, send coupon below for our book, "Walls and Roofs for Industrial Buildings."

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COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO • NATIONAL TUBE DIVISION, PITTSBURGH
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☐ Please send me your new booklet on U·S·S 17 Stainless Steel for industrial buildings.

☐ Please arrange to have fabricators of Stainless Steel wall panels send me literature on their particular type of construction.

Name..... Title.....

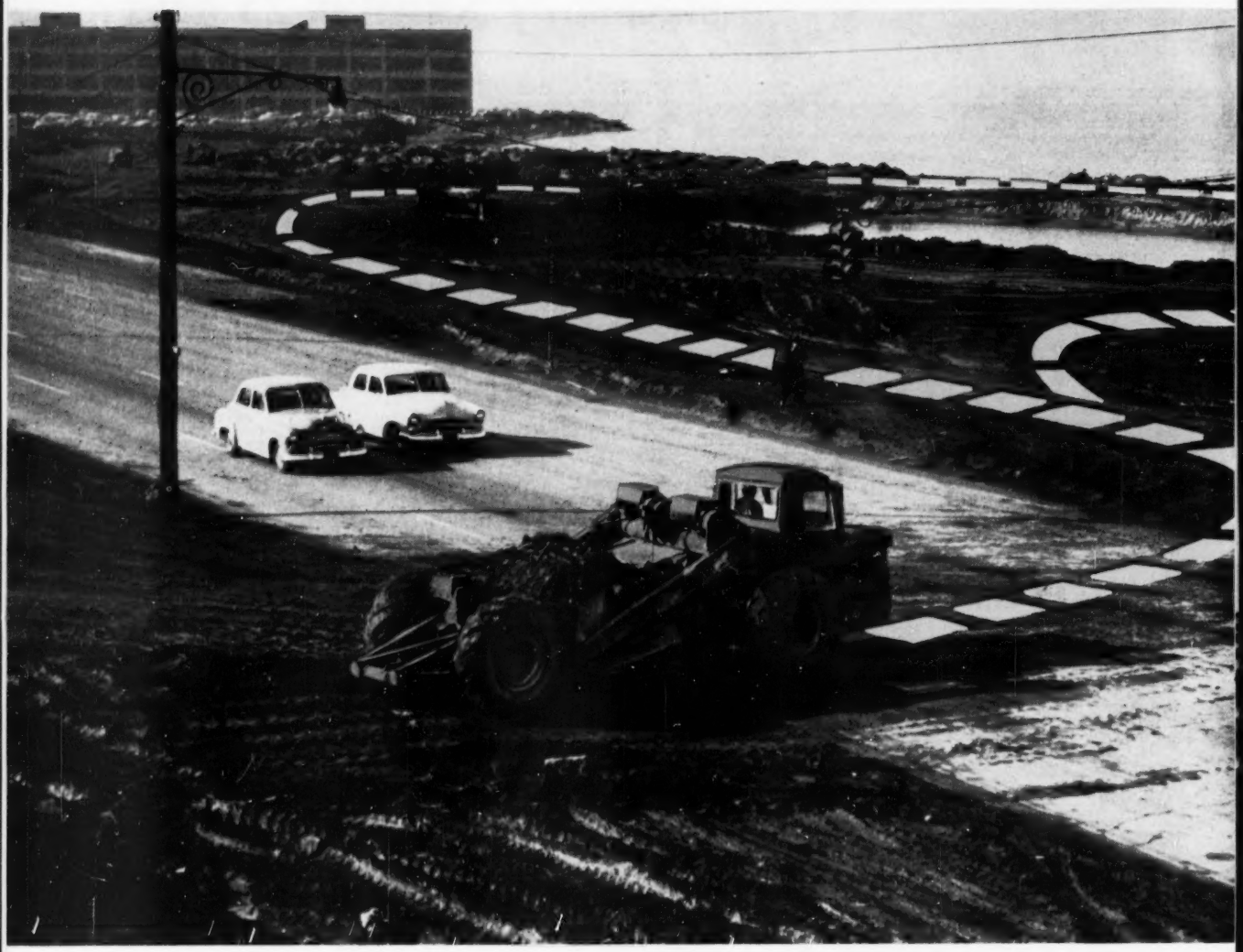
Address.....

City..... State.....

United States Steel produces only the Stainless Steel sheet and strip from which panels of this type are made; the panels themselves are fabricated by a number of our customers.

UNITED STATES STEEL

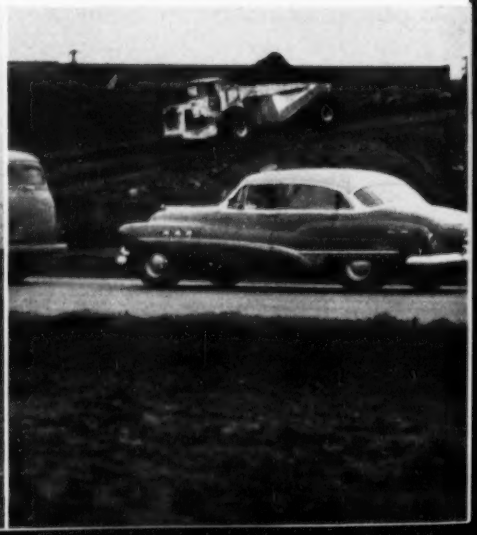
"Nothing can move



Forward, positive ejection wipes bowl clean of soggy material as Tournapull spreads on the run. Frame on front of prime-mover takes 8' bulldozer or V-snow plow.

With power on front wheels, Tournarocker backs safely to edge of fill. Near vertical tilt of bowl dumps load cleanly. No dirt rides back to cut payload on next trip.

Fully-loaded 9-ton Tournarocker drives safely down 10% grades. Multi-disc air brakes provide 2822 sq. in. total braking surface — 4 times as much as most haulers.

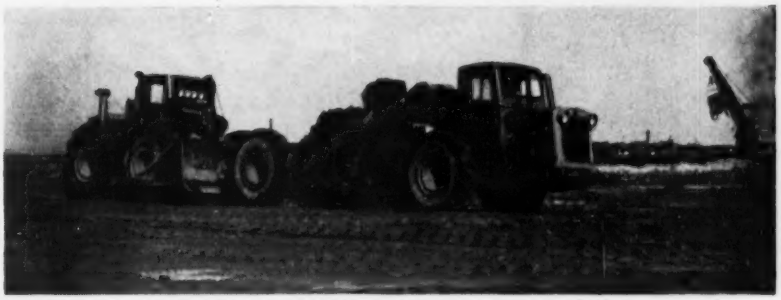


dirt cheaper on short hauls"

Manually-controlled signal lets Tournapulls drive across heavily travelled 6-lane Lake Shore Blvd. There is little delay due to traffic and no damage to pavement.

Wide top opening of Tournarocker is easy target for dragline operator. Rear-Dump made longer hauls than Tournapulls, dumping material over fill to extend finger of land into lake.

5 LeTourneau rigs speed improvement of Cleveland's Lake Shore Blvd.



Great Lakes Construction Co. of Cleveland, Ohio, has 872,000 yards of earth to move on relocation of a short section of State Hwy. 2 (Lake Shore Blvd.) east of the city's downtown area. Fill is being dumped into Lake Erie to form roadbed for new stretch of highway which will eliminate a sharp "dog-leg".

Of total yardage, contractors assigned 400,000 yards to 3 D Roadster Tournapulls, a Tournatractor, and a 9-ton D Tournarocker. The rest of the dirt they plan to handle with 3 excavators and 10 or 12 dump trucks (5 to 10-yd.).

50 yds. hourly on 1500′ hauls

In typical operation, the Tournapulls must haul across existing highway which handles up to 80,000 cars daily. Despite a soft, wet borrow pit, 10% grades, and some unavoidable traffic delays on a 1500′ haul, each 7-yd. Tournapull averages 400 pay yards per 8-hour shift, according to contractors' estimate.

85 yds. hourly on 700′ hauls

On short hauls, production rises accordingly. Time studies made when the "D's" were working 700 to 800′ hauls show each rig made a round trip every 3 minutes. That's about 17 loads per 50-minute hour per unit. Loads, in the water-soaked sand and silt, figured at 5 pay yds. So each Tournapull accounted for 85 pay yds. hourly.

"Work when other rigs can't"

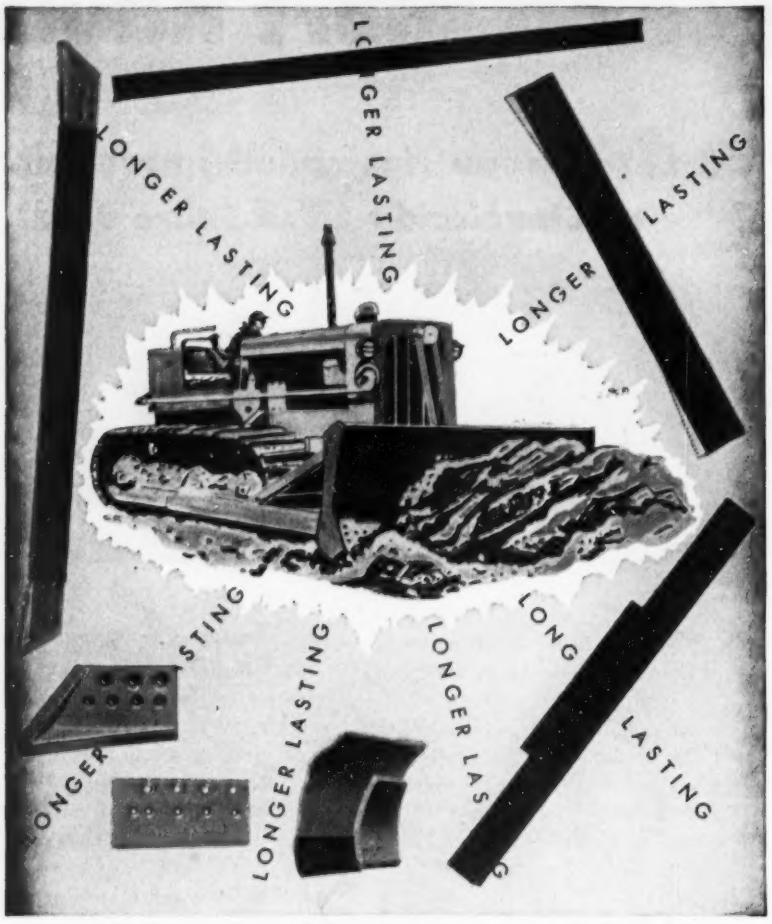
Company President Frank P. Converse, Jr. comments that, "D Roadsters perform very economically. I don't believe anything can move dirt cheaper on short hauls." Converse used these same units on the Gordon Park sections of the same highway, which is the express route to Cleveland's downtown area and stadium. Superintendent Carroll G. Nelson adds, "Our ' D's ' do an amazing job. Their weight and size make them ideal machines for work in mud. We can keep going in conditions that stop other rigs."

Find out how D Tournapull can pay off in fleet operation or working alone as a self-loading tool. Ask your LeTourneau-Westinghouse Distributor to arrange a demonstration on your job. There's no obligation.

Tournapull, Tournarocker—Trademark Reg. U.S. Pat. Off. Tournatractor—Trademark DPRT-382-H

LeTourneau-Westinghouse Company

PEORIA, ILLINOIS

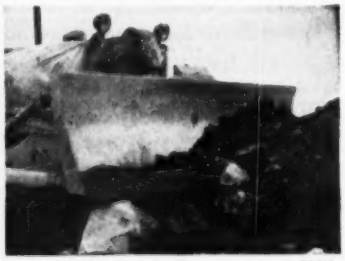


Increase Dozer Profits

WITH ESCO BLADES AND END BITS

Experienced dozer operators depend on *ESCO* Manganese Blades and alloy steel End Bits to get them through the toughest jobs... *and make more profit! ESCO* Cutting Edges give more production hours per dollar because they are specially cast from *ESCO* Manganese steel... your assurance of long trouble-free service.

There's the right *ESCO* Blade and End Bit for all popular makes of dozers, angledozers, graders and scrapers. Your *ESCO* Dealer carries a wide selection in stock. He will be glad to recommend the *right ESCO* Blade and End Bits for your equipment and job. Call Your *ESCO* Dealer today!



The rougher the going, the tougher your ESCO Blades and End Bits get... because they are cast of special work-hardening ESCO Manganese and High Alloy Steel.

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ESCO

Offices and Warehouses: Honolulu, Hawaii; Houston, Texas; New York, New York; Los Angeles, San Francisco, California; Seattle, Spokane, Washington; Centralia, Pennsylvania; Eugene, Medford, Oregon; Salt Lake City, Utah. In Canada: Vancouver, B. C., and Toronto, Ontario.

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MEN AND JOBS

Kansas Highway Department to use foreign engineers

Ever since the war the Kansas highway department has been unable to keep enough graduate civil engineers on hand for state highway work.

Now the department, faced with a critical shortage of 100 qualified engineers, has come up with what could be one solution to the problem: a plan to obtain engineers from Mexico by means of "scholarships."

This idea, devised by highway director Gale Moss, has a twofold purpose—to help Kansas fill its vacancies and, at the same time, to provide practical training for engineers of countries willing to participate in the plan. In addition to the Mexicans, the department also will employ a British engineer. And as the plan develops, it's hoped that engineers from other countries will be included.

Here's how the program is set up. In mid-September, Moss—along with State Highway Engineer Ross Keeling and a Mexican employee of the department Angel Oliva—selected six English-speaking engineers.

They'll be sent to Kansas (at their own expense) in cooperation with the International Road Federation, the Mexican Highway Association and the director of technical cooperation of the American Embassy in Mexico City.

The candidates will work in Kansas on a three-month trial basis and, if satisfactory, will remain not less than one year—nor more than three. After the trial period they will be paid at the same rate as other department engineers doing comparable work.

According to Moss, Mexican engineers consider Kansas and the Middle West highway systems "an excellent training ground."

Chief engineer named

The Delaware state highway department has appointed William A. McWilliams to the post of chief engineer. He succeeds Richard A. Haber who will continue as consultant.

McWilliams is not new to the job: he held this same position from 1947 to 1948. Then he was named director of the Delaware River Crossing Division. Last May he became general manager of the Delaware Memorial Bridge. Walter B. McKendrick, an assistant engineer in the Wilmington water department, will take over as general manager of the bridge.

(*Men and Jobs continued on page 71*)

GOT A PROBLEM IN TRADE WASTE TREATMENT?

If you have a problem of recovering a valuable or important component from the liquid waste of your plant . . . or if the waste from your plant is noxious or detrimental to the public . . . why not have a Chain Belt Company Waste Treatment Engineer help you find an efficient, economical solution. With broad experience in industrial waste treatment methods, these practical experts can assist you and work with your engineers in obtaining the most effective system of treating waste to avoid stream pollution, abate nuisances, recover fats, oils, foundry sand, water and many other heretofore wasted materials. Equipment for continuous flow processes is available in the Rex Line for sedimentation, screening, flotation, flocculation and concentration. In many applications, a Rex Trade Waste Treatment installation has more than paid for itself in savings it effected.

For complete information on how Chain Belt Trade Waste Specialists and Rex Trade Waste Treatment Equipment can assist you, mail the coupon.

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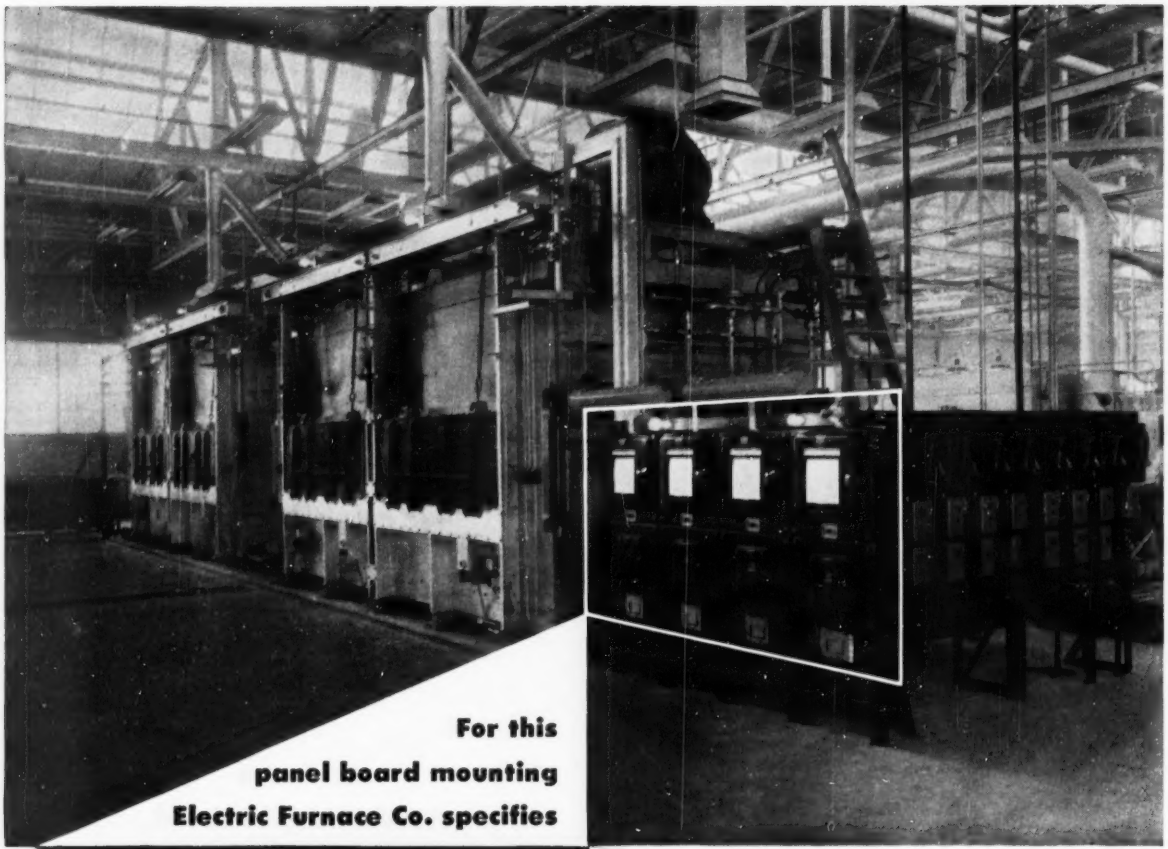
Address.....
City.....State.....



For this panel board mounting Electric Furnace Co. specifies

K&M Ebonized Asbestos

The above illustration features two EF gas fired double ended recirculating draw furnaces for treating aircraft engine parts, manufactured by the Electric Furnace Company, Salem, Ohio. K & M Ebonized Asbestos is well suited for the control panels, because of its high resistance to severe shocks, vibration, rapid temperature change and its exceptionally high dielectric strength.

For switchboards, bus bar supports, cabinets, compartment linings, bench boards, testing tables, and such—it is ideal. It is made in thicknesses from $\frac{1}{8}$" to 4", giving it a wide range of usefulness.

Perhaps this time-tried product can help solve one of *your* design problems! Write us for complete specifications on K & M Ebonized Asbestos, or for answers to questions about particular applications.

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Digby's appointment fills Federal Power Commission

The Federal Power Commission will have its full complement of five members when Louisiana Democrat Seaborn Lee Digby moves in.

President Eisenhower's latest appointment to the commission has won Senate confirmation as a replacement for Oklahoma Democrat Harrington Wimberly, whose term expired late in June.

Digby's record of public service in Louisiana dates back to 1919. He has served as district attorney, state district judge, city attorney for his home town of Monroe; and as state commissioner of conservation. At the time of his appointment he was engaged in private law practice.

In testimony before the Senate Interstate and Foreign Commerce Committee, which recommended his confirmation to the Senate, Digby said that he always has been a firm believer in the American enterprise system. "But I certainly would not advocate that to the extent of doing any injury to the public interest in the way of public power."

Careers . . .

Government appointments—Colonel **Thomas J. Hayes III,** district engineer with the Corps of Engineers at Little Rock, Ark., has been appointed district engineer at Omaha, Neb. He will be succeeded at Little Rock by **Lt. Col. Joe A. Clema,** area engineer at the district's Barksdale Air Force Base office . . . **Charles F. MacNish** has been named chief of the engineering division, Upper Mississippi Valley Division, Corps of Engineers. He formerly served as assistant to the chief . . . **Harland J. Corson,** president of Corson Co., Inc., Washington, D. C., has been appointed United States Director of Technical Cooperation for Saudi Arabia. He succeeds **Dr. Samual S. Stratton** who has returned to his post as president of Middlebury College of Vermont after a year's leave of absence.

Local government appointments—**W. T. Cox,** city construction engineer at Charlotte, N. C., has resigned to become director of public works and city engineer at Gastonia, N. C. . . . **Robert Haselwood,** former city engineer at Tulelake, Calif., has been appointed city engineer at Anchorage, Alaska. One of his jobs will be supervising the city-owned public utilities system . . . **William J. Mortimer** has replaced retired **George A. Quinlan** as Cook County, Ill., highway superintendent. He has been assistant superintendent.

Appointments—**Ximeno Tejada** is in charge of the Lima, Peru, office of Fluor Peruana, S. A.—newest foreign affiliate of Fluor Corp., Ltd. He formerly was sales engineer in the firm's New York office.

Changes—**John J. Manning,** Vice Admiral USN (retired) and former chief of the Navy's Bureau of Yards and Docks, has joined the New York firm of Kelly & Gruzen, architects and engineers. He will be technical director in charge of engineering . . . **Frank W. Edwards,** head of civil engineering at the Illinois Institute of Technology, has been placed in charge of the new Chicago office of Stanley Engineering Co., Muscatine, Iowa . . . **Robert A. Wilson** has been appointed vice-president for engineering and production at Shea Chemical Corp. in Baltimore, Md. Formerly he was manager of the process engineering division with the Air Reduction Co.

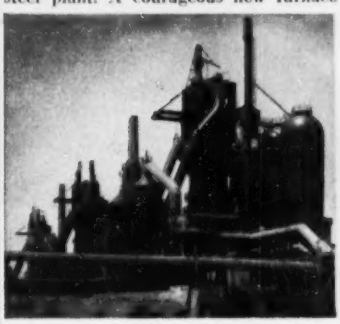
U. S. Army photo

DECORATED—**Michael E. Kalette, construction advisor to the Secretary of the Army since 1950, left that post last month with a citation for "exceptional civilian service" and a medal, here shown being conferred by Under Secretary Earl Johnson. The citation emphasized his contribution "to the rapid expansion of the Army's facilities program resulting from Korean conflict" and "to the establishment of the Joint Construction Agency in Europe." President of the contracting firm, James Stewart Co. of New York, before going to Washington, Mr. Kalette is now associated with Patterson-Emerson-Comstock, electrical contractor of Pittsburgh.**

what's NEW in Engineering

An automatic welding machine, developed by a Michigan company, is claimed to duplicate the work of dozens of human welders. The octopus-like machine generates temperatures of 2000° F.; is water cooled. One operator can make 62 simultaneous welds with it. In one minute it can perform 744 weld operations.

Reducing coke consumption while increasing pig iron production was the dual problem facing Kaiser Engineers in designing and building blast furnaces for a California steel plant. A courageous new furnace



design gave record results—1335 tons of pig iron per day on furnaces rated for 1200 tons. These furnaces use 1409 lbs. of coke per net ton of iron against a national average of 1600-1700 lbs. per ton. We'll send you a reprint of an article by Dr. W. C. Rueckel which tells how Kaiser Engineers attained this outstanding furnace practice—with savings in capital and operating costs through increased production.

Simplified Drafting Practice, by Healy and Rau, is a best-selling new book which outlines a modern approach to industrial drafting. The method claims to cut drafting time 30-50%; reduce large blueprints to handy pocket size.

For those clients who want general consulting engineering services, such as economic studies, evaluation, investigation of manufacturing facilities, or analysis of operating costs, the full engineering experience of Kaiser Engineers is available. Call or write: Kaiser Engineers Division of Henry J. Kaiser Company, Kaiser Building, Oakland 12, California.

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Williams Type

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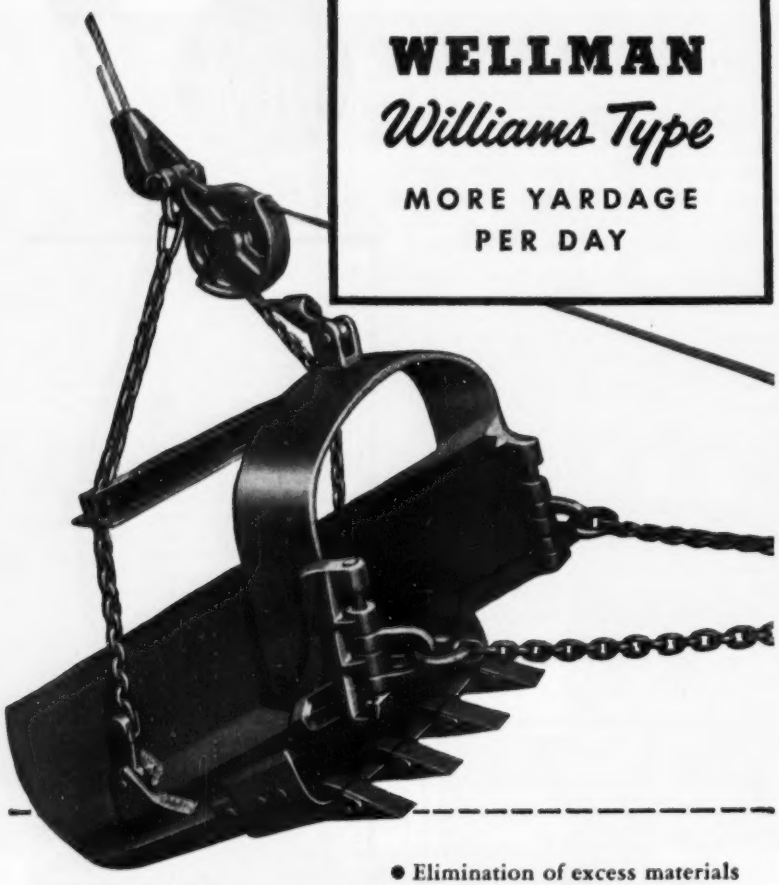

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Built of special alloy steel, using strong welded design, Wellman buckets provide strength and stamina for long-term economy. Perforated designs also available. You'll do better with Wellman.

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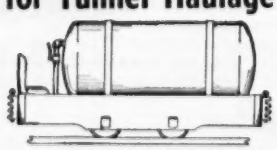

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DIESELS: 1½, 2 or 3 TON. Equipped with Exhaust Scrubber for underground operation.

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OBITUARIES

Wm. H. M. Evans, 78, former highway engineer in Washington, D. C., and in Virginia, died at Prince George, Va., Aug. 24. During the 1920's, Mr. Evans worked for the Virginia State Highway Commission and in 1929 he joined the District Highway Department. A few years later he moved over to the Commerce Department's Bureau of Public Roads, from which he retired in 1942. While with the bureau he had worked on the Mount Vernon highway.

Percy Coleman Kuhn, 54, civil engineer, consultant and structural designer of New Orleans, died Aug. 31. He was a graduate of the University of Virginia.

William H. Garvell, 70, civil engineer who specialized in structural work, died in Philadelphia Sept. 6. From 1933 to 1936 he was Pennsylvania Director of Public Works. He was a 1906 graduate of the University of Pennsylvania, and for several years taught civil engineering at Drexel Institute.

John S. Sheridan, 80, who was chief engineer of the Brooklyn, N. Y. bureau of highways from 1907 to 1910, died Sept. 5. He was an 1897 graduate of Rensselaer Polytechnic Institute. He carried out various engineering assignments in South America, Mexico and Spain. He aided in the development of the west side of Manhattan along the Hudson River.

Frederick W. Southworth, 78, architect of the Bethesda Naval Hospital, Washington, died at Needham, Mass., Sept. 1. For 40 years he was civilian architect for the Navy at the Bureau of Yards and Docks. His chief work was the design of naval hospitals throughout the U. S. He was a retired commander in the Civil Engineer Corps, Navy Reserve. He was a 1900 graduate of M. I. T.

Ira Wilson Barber, 78, Mount Airy, N. C., civil engineer, died Aug. 31. He obtained his engineering degree from N. C. State College in 1889, and served as superintendent of the municipal sewer, waterworks, power and light department at Mount Airy from 1904 until 1920, when he resigned to engage in private civil engineering practice.

Jens Braae-Jensen, 73, consulting structural engineer, died Aug. 28 in New Orleans, La.

Plenty of heart for tough jobs!

New diesel-powered Model RDF-190 Series. GVW ratings, 30,000 to 38,000 lbs. Famous Comfo-Vision cab.

The heart of the 6-wheel truck is the *bogie*. INTERNATIONAL's bogie has been performance-proved on the tough jobs. Proved beyond a doubt by INTERNATIONAL's 18 straight years of 6-wheel sales leadership.

INTERNATIONAL brings you this advanced bogie design in *America's most complete line of 6-wheelers*—the widest choice, by far, of models, engines, transmissions, and axle ratios. No other 6-wheelers provide such exact truck-to-job specialization!

Ask your INTERNATIONAL Dealer or Branch for all the facts—and a demonstration. Time payments arranged.

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OUTSTANDING ADVANTAGES OF THE INTERNATIONAL BOGIE

The third differential and power divider allow each wheel to rotate independently. There is practically no tire scuffing, "axle fight," or power loss. Perfect matching of tires is unnecessary. Fuel consumption is lower. Under adverse conditions, the third differential can be locked out, giving positive traction on all wheels.

Abnormal tire wear eliminated because INTERNATIONAL bogie design *always* keeps wheels parallel to frame.

Reduces road shock by 50%. "Walking action" design keeps chassis frame and body level while bogie "walks" over obstructions and levels out the road.

Extra strength without extra weight. More payload per pound of chassis weight results from elimination of unnecessary dead weight. Strength is concentrated where needed.

Load stresses equalized. Load is carried from the frame to the axles at *four* points.

23 NEW 6-WHEEL MODELS

GVW ratings, 22,000 to 90,000 lbs. Engines from 130 to 356 horsepower. Choice of gasoline or LPG fuel systems. Diesel engines available for models with GVW ratings of 30,000 lbs. and over. Transmissions and axle ratios to meet any requirement. America's most complete truck line—170 basic models from ½-ton pickups to 90,000 lbs. GVW off-highway models.

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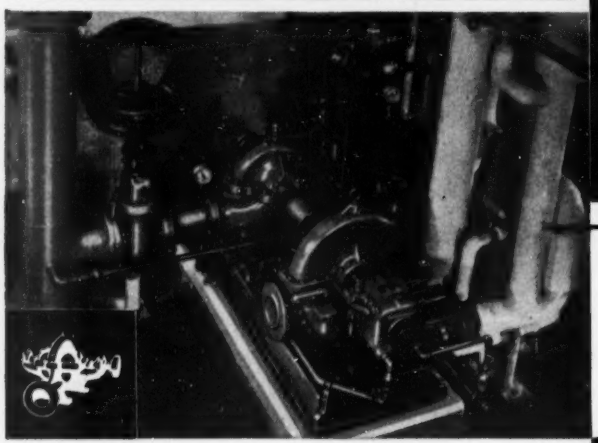
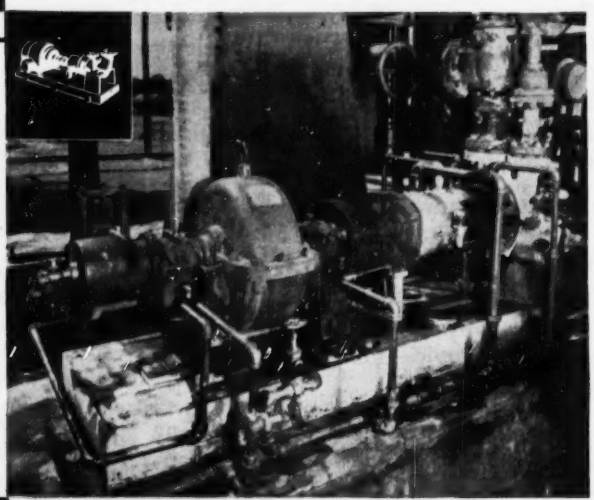
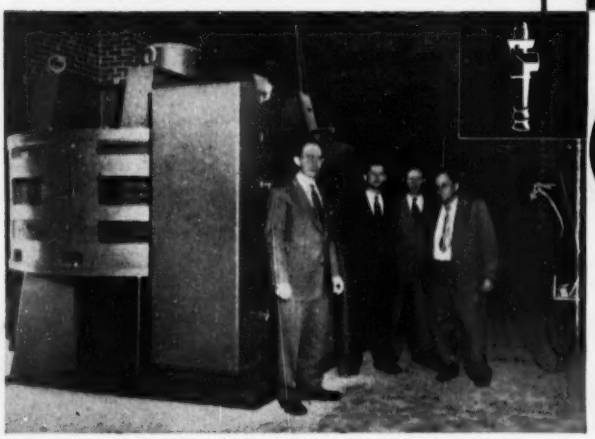


FIRE PROTECTION PUMPS—*A Peerless fire pump provides permanent and reliable fire protection for every commercial and industrial risk.* Peerless, with fully approved fire protection pumps, approved fire protection pump auxiliary equipment, and skilled fire protection pump application service offers unsurpassed protection against the hazards of fire. At the left is a typical Underwriters' approved Type AF Peerless horizontal fire pump, equipped with steam turbine drive. Widest range of approved ratings are available. Described in Bulletins B-1500 and B-152.

HEAVY DUTY CENTER-LINE MOUNT PUMPS—*The continuous transfer of crude charge stocks at high temperatures is handled by type PR pumps.* The Peerless line of packing gland construction and mechanical shaft seal construction pumps for handling hydrocarbons, chemical solutions and water at elevated temperatures and pressures is most complete. The pump in the view at the right is handling oil at 850° F. in an Oklahoma refinery. These refinery and chemical process pumps have a number of modern design features to recommend their installation. Fully described in Bulletin B-1605.



VERTICAL FLOOD CONTROL PUMPS—*Peerless mixed flow and propeller type pumps are widely applied to both industrial and public works large volume pumping.* These are the giants in the world of pumps. The pump shown below is one of a score of Peerless mixed flood pumps installed in flood control pumping stations along the Ohio River for the Corps of Engineers. Capacities as high as 220,000 gpm can be handled. Widely used by industry for such applications as pumping sea or river water for steam generation stations, process service work in chemical plants, waste disposal and a wide range of similar applications where liquids must be transferred in large volumes against low heads. Fully described in Bulletin B-148.



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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M E SCIORRA, F S. DEMBEK, Reports.
J. H. WEBBER, M R. ROESSLER, E R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

Mass., Lynn—B.A. 9/22—City, City Hall, constr., install 16 in. transmission main, appurtenances, 7,500 lin. ft. 16 in. c.i. main from Walnut St. Pumping Station to Broadway, valves, piping 12 in. altitude, appurtenances, concrete chamber, Walnut Street Pumping Station. Plans deposit $15 refundable. Morris Knowles, Inc., 1 1312 Park Bldg., Pittsburgh, Pa., engr. New bid date. CD 8/31.

† **Me., Limestone**—WELL HOUSES AND WATER SOFTENING PLANT—B.A. About 9/24—U. S. Eng., 857 Commonwealth Ave., Boston 15, Mass., well houses and water softening plant, outside pipe lines, exterior electrical work at Limestone Air Force Base, ENG-19-016-54-28. Under $500,000. Plans deposit $10. CD 9/19/51.

▲† **Mass., Chicopee Falls**—HANGARS—B.A. On Or About 10/23—U. S. Eng., 857 Commonwealth Ave., Boston, 15 multi-purpose hangars, Westover Air Force Base, ENG-19-016-54-31. $5,000,000. Plans deposit $25.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

The Henley-Lundgren Co., 143 Hardford Pike, Shrewsbury, Mass. LB $1,334,162, est. $1,350,200. hy. and bridge constr. Rte. 5, Agawam;

A. Singarella Co., 22 A. Tremiett St., Dorchester, Mass. LB $82,238, est. $82,500. hy. work, Watertown St., NEWTON, MASS. Bids Sept. 1. CD 8/18.

Jalco Corp., 918 Providence Hy., Norwood, Mass. CA $99,136, est. $100,000. water mains, FITCHBURG, MASS. City, P. Wks. Dpt., City Hall, Fitchburg, Mass. Whitman & Howard, 89 Broad St., Boston, Mass., engrs. CD 4/15.

BUILDINGS

LOW BIDS AND CONTRACTS

Olson & Appleby, 222 Union St., New Bedford, Mass. CA $533,933. elementary SCHOOL near high school, BOURNE, MASS. Town, supt. schools, Bourne, Mass. Bids July 31, awarded Aug. 27. CD 8/7.

Campanelli Homes, Inc., 165 Albemarle Rd., Newton, Mass. Owner Builds. $350,000. 22 RESIDENCES, NEWTON, MASS. CD 9/2.

Patrick F. Beresford, 269 Spring St., Medford, Mass. CA Est. $300,000. CONVENT, ROSLINDALE, MASS. Sacred Heart R.C. Parish, Rt. Rev. Edward G. Murray, pastor, 169 Cummins Hy., Roslindale, Mass. CD 8/21.

▲ **Robert Glen Builders**, 738 Main St., Hartford, Conn., CA, $1,000,000, 500-car PARKING RAMP, HARTFORD, CONN. City, City Hall, Hartford, Conn., land owner and G. Fox & Co., 966 Main St., Hartford, building owner. CD 12/12. Abbott Merkt & Co., 10 E. 40 St., New York, N. Y., archt. CD 12/12.

Arthur A. Canzler, Padanaram Rd., Danbury, Conn., LB $777,199, Elementary SCHOOL, Picket Distr. Site, NEW MILFORD, CONN. Town Bd. Educ., Town Hall, New Milford, Conn. CD 3/24/50.

Felix Buzzi & Son, 612 S. Main St., Torrington, Conn. LB, $319,000, HIGH SCHOOL, WOODBURY, CONN. High School Bldg. Comn., Woodbury, Conn. Bids Aug. 31. CD 8/10.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

† **R. I., Newport**—B.A. 9/22—Officer in Charge of Constr., Naval Base, Newport, cleaning, sealing, spreading, sealing roads, crushed stone on concrete pavement, NOY 79803 (SF), Spec. 38317 (SF). Plans deposit $10.

BIDS ASKED—BUILDINGS

▲ **N. Y., New York**—SCHOOL—B.A. 10/6—Bd. Educ., 49 Flatbush Ave. exten., Brooklyn, Zone 1, general constr., plumbing and drainage, heating and ventilating, electrical and lighting fixtures for const. new Junior High School 167 (formerly P.S. 86), E. 76th St., between 2nd and 3rd Aves., Manhattan Boro, $3,296,425. Plans deposit $33 general constr., $10 each others. CD 5/14/45.

N. Y., Mariners Harbor—SCHOOL—B.A. 10/8—Bd. Educ., 49 Flatbush Ave. exten., Brooklyn, Zone 1, general constr., plumbing and drainage, heating and ventilating, electric and lighting fixtures P.S. 22, Forest Ave. and Sander St. $857,080. Plans deposit $15 general constr., $6 each plumbing and drainage, heating and ventilating, $7 electric and lighting fixtures. Bids Aug. 18 rejected. CD 7/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Moore-Lopier Corp.**, 210 E. 40th St., New York 16, N. Y., CA $1,162,896, est. $1,183,000, storm sewer interceptors and misc. work 1.25 mi. New York State Thruway-Southern West. Connections Sub. 11 (N. Y. City Line-Tuckahoe Rd) S.W.C. 53-1, Westchester Co., NEW YORK. Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, N. Y. Bids July 23. CD 7/27, under LB.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

Moore Lopier Corp., 210 E. 40 St., New York 16, N. Y. LB $1,084,135, est. $1,131,000, Cross Bronx Expressway Contr. 6A (3rd Ave. El. R.R.), 0.2 mi. FA. CBE. 53-1, Bronx Co. Bids Sept. 3. CD 8/13.

▲ **NEW JERSEY**—New Jersey Hy. Auth., State Hy. Dpt. Office Bldg., 1035 Parkway Ave., Trenton,

Cayuga Foundation Corp., 30 Vesey St., New York 7, N. Y., LB, $2,580,355, demolition, grading, street paving, drainage and structures from south of Nye Ave. to north of Springfield Ave. Town of Irvington, Garden State Parkway, Contract No. 58, Section 3, Essex Co.;

Lizza & Sons, 21 Orchard St., Oyster Bay, N. Y., LB $2,524,467 paving 22 mi. from Oyster Creek to Dover Rd., Lacey Twp-Berkeley Twp., Borough of Beechwood, Borough of South Toms River, Garden State Parkway, Contract 85, Section 10 Ocean Co. Bids Sept. 3. CD 8/17.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., North Office Bldg., State Capitol, Harrisburg,

Latrobe Road Constr. Co., Latrobe, Pa., CA, $1,330,959. 24,479 ft. c. conc. 22 ft. wide, I-I beam bridge T. R. 30 Unity, Derry and Ligonier Twps., Westmoreland Co. Bids July 31, awarded Sept. 2. CD 8/4, under LB.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., North Office Bldg., State Capitol, Harrisburg,

Conduit-Foundation Corp., 770 S. Schuylkill Ave., Phila., Pa., CA $8,194,350, constr. 20,961 ft. separated hys. with rein.-con. pavement, 10 I-beam and 5 plate girder bridges, T. R. Alt. 1. Philadelphia and Montgomery Counties. Bids July 31, awarded Sept. 1. CD 8/4, under LB.

Joseph Lombardi & Sons, 1311 S. Broad St., Phila., Pa., LB $519,446. Mill Creek Sewer reconstr. PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Smaule Baxter, c/o owner, Water Comr. CD 3/11/46.

Contee Sand & Gravel Co., Laurel, Md. LB $99,200. roadway, playground area within limits of Dist. Training School Grounds, LAUREL, MD. D. C. Govt. Director Hys., 499 Pa. Ave. N. W., Wash., D. C. Bids Aug. 27.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **East Huntington Estates**, c/o Alwin Cassens, Jr., archt., 145 So. Franklin Ave., Valley Stream, N. Y. Owner Builds. $2,000,000. 200 HOUSES, 45 acre tract Jericho Turnpike, east of Elwood Rd., HUNTINGTON, N. Y.

Caristo Constr. Co., 26 Court St., Brooklyn 2, N. Y. CA $876,000 new addn. and modernization existing bldg., P.S. 135 SCHOOL, 89 Ave. between 207 and 208 Sts., Queens Co., QUEENS VILLAGE, N. Y. Bd. Educ., Bureau Constr., 49 Flatbush Ave. exten., Brooklyn 1, N. Y. Bids June 16. CD 6/24, under LB.

Corlynn Estates Homes, c/o Percy Simon, archt., 362 Cedar Lane, Teaneck, N. J. Owner Builds, $600,000. 40 HOUSES on tract at Berkeley and Linden Sts., NEW MILFORD, N. J.

Walter Kidde Constr. Co., Inc., 140 Cedar St., New York, N. Y., CA, $500,000, WAREHOUSE and BOILER HOUSE addn., SWEDESBORO, N. J. California Packing Corp., 215 Fermont St., San Francisco, Calif. CD 8/13, under LB.

▲ **Fairview Home Constr. Co.**, c/o Lester Cohen, archt., 41 Main St., Hackensack, N. J. Owner Builds. $4,000,- White Motor Co., E. 79th St. and Wallace Ave., Aves., VERONA, N. J.

▲ **Worsham-Midwest Corp.**, 2627 W. 6 Ave., Denver, Colo., CA $2,000,000, design and construct 1 story, 130,000 sq. ft. masonry, steel FACTORY, EXTON, PA. White Motor Co., E. 79th Et. and Wallace Ave., Cleveland, O. CD 9/3.

Spera Constr. Co., 1719 N. Front St., Harrisburg, Pa. CA $100,000. 1 story, 100x300 ft. WAREHOUSE, 7 and Anganese Sts., HARRISBURG, PA. Turnpike Warehouse Co., 7th and Anganese Sts., Harrisburg, Pa.

▲ **John McShain, Inc.**, 1501 N. Arlington Ridge Rd., Arlington, Va., CA, $6,192,000, HOSPITAL, 12 and Varnum Sts. N. E., WASH., D. C. Providence Hospital, 2 and D Sts. S. E., Wash., D. C. Bids Sept. 3. CD 8/4.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

Fla., Jacksonville—B.A. 9/24—City, City Hall, water main extensions in Atlantic Blvd. Reynolds, Smith & Hills, P.O. Box 4017, engrs. CD 5/17/46.

WEST VIRGINIA—B.A. 9/29—West Virginia Turnpike Comn., 1340 Wilson St., Charleston, Zone 5,

Fayette and Kanawha Counties—Contract 31, paving, drainage, misc. constr. 16 mi. Turnpike Mile 51.6 to 67.6. Plans deposit $30.

Fayette Co.—Contract 31 A, paving, drainage, misc. constr. including Moss Interchange 5.6 mi. Turnpike Mile 51.6 to 57.9 mi. Plans deposit $30.

Fayette and Kanawha Counties—Contract 31B, paving, drainage, misc. constr. 4.7 mi. Turnpike, Mahan to Whittaker Mile 57.9 to 62.8. Plans deposit $30.

Kanawha Co.—Contract 31 C, paving, drainage, misc. constr. 4.8 mi. Turnpike Whittaker to Standard Mile 62.8 to 67.6. Plans deposit $30, Howard, Needlet, Tammen & Bergendoff, 804 A Greenbrier St., Charleston, engrs. CD 4/30/52.

▲ **S. C., Columbia**—B.A. 10/6—City, City Hall, filter plant and raw water treatment plant addn. $1,000,- 000. Plans deposit $50. Barber, Keels & Assocs., 1418 Marion St., engrs. CD 12/12.

† **Fla., Tampa**—DRAINAGE GRATES—B.A. On Or About 10/9—U. S. Eng., P.O. Box 4970, Jacksonville, replacing concrete drainage grates, MacDill Air Force Base, Hillsborough Co., about 4 mi. southwest of here, Serial No. ENG-08-123-54-16.

BIDS ASKED—BUILDINGS

▲ **S. C., Clemson**—DORMITORY QUADRANGLE—B.A. 9/22—Clemson Agricultural College, Clemson, dormitory quadrangle. $4,000,000. CD 9/16/46.

S. C., Lancaster—HIGH SCHOOL—B.A. 9/24—Lancaster Co. Bd. Educ., Lancaster, Barr Street High School. $520,000. Plans deposit $100. Lockwood Greene Engineers, Inc., Montgomery Bldg., Spartanburg, archt. CD 4/15.

Ala., Panola—SCHOOL—B.A. 9/25—Sumter Co. Bd. Educ., Livingston, high school, $300,000. Extended date. Bond & Bond, 1705 Carter Hill Rd., Montgomery, archts. CD 8/27.

Fla., Green Cove Springs—SCHOOL—B.A. 9/28—Clay Co. Bd. P. Instruction, Green Cove Springs, elementary school, $325,000. Plans deposit $75. A. Eugene Cellar, 502 Riverside Ave., Jacksonville, archt.

Fla., Marianna—DORMITORY—B.A. 9/28—Florida State Imprvt. Comn., Caldwell Bldg., Tallahassee, dormitory at Industrial School for Boys. $404,000. Extended date. CD 8/25.

Tenn., Knoxville—SCHOOL—B.A. 10/1—Knox Co. Bd. Educ., Court House, Papermill Elementary School. $650,000. CD 10/13/50.

† **Fla., Coral Gables**—KITCHEN and DINING HALL—B.A. 10/13—Veterans Admin., Munitions Bldg., Wash., D. C. revisions to Kitchen and Dining Hall Bldg. 1, Veterans Administration Hospital.

† **Ky., Fort Knox**—SHOP—B.A. 10/13—U. S. Eng., 830 W. Broadway, Louisville, Zone 3, heavy tank

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply	**Latin America**
Sewers, Waste Disposal	**Public Buildings**
Bridges	**Commercial Buildings**
Streets & Roads	**Industrial Buildings**
Earthwork, Waterways	**Unclassified**

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects invloved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	**Federal Government**
▲	**Project of $1,000,000 or over.**
B.A.	**Bids Asked**
ENR	**Engineering News-Record**
CD	**Engineering News-Record Construction Daily**

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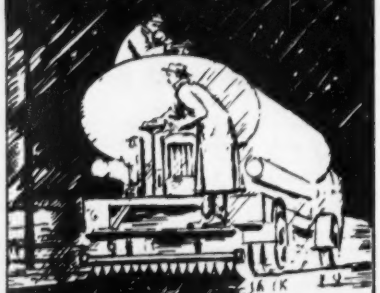

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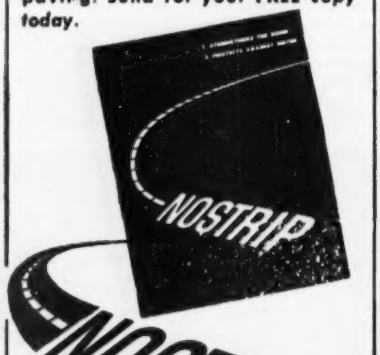

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and artillery shop, incl. site work, excav., water lines, sanitary sewers, c. conc., ENG-15-029-54-10. Plans deposit $15. CD 8/11, under LB.

Fla., Clearwater—B.A. 10/14—SCHOOL—Pinellas Co. Bd. P. Instruction, 305 Haven St., Clearwater, Junior-Senior High School. Over $750,000. Bids 8/26 rejected. CD 8/12.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

M. J. Bles Constr. Co., McLean, Va., CA **$59,655,** constr. culvert over Hooff's Run, Diagonal Rd. and King St., ALEXANDRIA, VA. City, City Hall, Alexandria, Va., Bids Aug. 26, awarded Sept. 1. CD 8/18.

Crosby Constr. Co., Union, S. C., CA **$104,400,** Sect. 1, filter plant;

Thomas & Allen, Trade St., Charlotte, N. C., CA **$107,522,** Sect. 2, distr. sys. FOLLY ISLAND (Mail Folly Beach), S. C. Town, Folly Island, S. C. Bids Aug. 26.

Taylor Iron Works & Supply, Macon, Ga., CA, **$100,000,** water plant for residential subdivision, MIAMI, FLA. Westview Homes, 3501 N. W. 58 St., Miami, Fla.

Stevens & Sipple, Orlando, Fla., CA, **$75,000,** stock barn, ORLANDO, FLA. Central Florida Exposition, c/o contractor.

O'Laughlin & Hansen, Inc., Rochester, Minn., CA, **$130,263** drainage control structures, VERO BEACH, FLA. Indian River Farms Drainage District, Vero Beach, Fla.

Peyton Higgison, P. O. Box 402, Mobile, Ala., CA, **$92,913** swimming pool in Baltimore Park, MOBILE, ALA. City, City Hall, Mobile, Ala. Bids Aug. 28. CD 8/12.

† **Clyde Hays,** Port Gibson, Miss. CA **$39,824.** drop inlet desilting dams, Tallahatchie Co.;

Allen Weaver Constr. Co., Rte. 4, Memphis, Tenn. CA **$42,100.** drop inlet desilting dams, Marshall Co., Inv. 30-54, MISSISSIPPI. U. S. Soil Conservation Service, Dpt. Agriculture, New Albany, Miss. Bids Aug. 25. CD 8/18.

M. & W. Constr. Co., Box 116, Tupelo, Miss. CA **$78,404.** grading, paving, bridge 3.701 mi. on county roads, WEST POINT, MISS. Bd. Supervs. Clay Co., West Point, Miss. Bids Aug. 28. CD 8/18.

† **V. J. Mitchell & Arnold R. Wolfe,** 1021 Ridgewood Dr., New Orleans, La. CA **$185,000.** topping Lake Pontchartrain Levee, Jefferson Parish, Inv. 54-31, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La. Bids Aug. 27. CD 8/14.

† **Delta Equipment & Constr. Co.,** 3324 Delaware St., Baton Rouge, La. LB **$37,239.** approx. 46,000 cu. yd. levee enlargement on Mississippi River, St. Bernard Parish, Inv. 54-35, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans 9, La. Bids Aug. 28. CD 6/26/46.

TENNESSEE—State Hy. Dpt., Nashville,

W. P. McClanahan & Co., Centerville, Tenn., LB **$524,219,** const. eight bridges and approaches thereto on St. Rt. 26 between point 0.123 mi. west of Wilson DeKalb Co. line and 1 mile east of Doweltown. 2.495 mi. Proj. No. F-2026-1-(9), Part II, Wilson and DeKalb Counties. Bids Aug. 21. CD 8/3.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,

Anderson-Gregory Co., Inc., Cotton States Bldg., Nashville, Tenn., LB **$164,214,** crushed stone or grav. surf. 3.783 mi. sect. of non-sys. hy. from St. Rt. 141 near Center Hill Dam, to Buffalo Valley, Proj. No. SAP-995-A, DeKalb and Putnam Counties;

John L. Binkley, Shelbyville, Tenn., LB **$62,600,** crushed stone, grav. or chert surf. 7.761 mi. sect. Secondary Rte. 2471, from St. Rte. 58 approx. 3 mi. south of Kingston and extending to Bernardsville, Proj. No. S-2471 (1), Roane Co.;

R. Bladers, Inc., Nashville, Tenn., LB **$261,681,** wid'n., resurf. 8.363 mi. St. Rte. No. 24, from Junction of St. Rt. No. 1, west of Nashville to Nashville city limits, Proj. No. SAP-557-B, Davidson Co.;

Brown Bros., Nashville, Tenn., LB **$71,719,** crushed stone and bit. materials surf. 1.775 mi. sect. of Secondary Rte. 4338, from St. Rt. No. 29 at Red Bank eastward to Hixon Pike, Proj. No. S-4338 (1), Hamilton Co.;

H. W. Caldwell & Son, Ashland City, Tenn., LB **$190,058,** crushed stone, grav. or chert surf. 5.707 mi. sect. St. Rt. No. 109, from LaGaurdo and extend to Gallatin, Proj. No. SAP-998-A, Wilson and Sumner Counties;

Sam Finley, Inc., 292 North Ave. N. W., Atlanta, Ga., LB **$258,785,** wid'n., resurf. with bit. materials 6.6 mi. Sect. St. Rt. No. 100, from Linden to Hickman Co. line, Proj. No. SAP-983-B, Perry Co.;

Lehman-Roberts Co., 1098 Wilson St., Memphis, Tenn., LB **$284,405,** wid'n., resurf. 8.3 mi. sect. St. Rt. 4 from Mississippi State Line to near the south city limits of Memphis, Proj. No. SAP-999-A, Shelby Co.;

McDowell & McDowell 699 Murfreesboro Rd., Nashville, Tenn., LB **$440,822,** grading, drainage, const. 2 bridges and crushed stone surf. 9.188 mi. sect. St. Rt. No. 6 from Hendersonville to near Gallatin, Proj. No. F 006-3 (17), Sumner Co.;

J. B. Michael & Co., 1021 Heywood St., Memphis, Tenn. LB **$101,198,** wid'n., resurf. with bit. materials 3.97 mi. sect. St. Rt. 3, from Millington to Tipton Co. line, Proj. SAP-729-B, Shelby Co.; LB **$615,187,** wid'n., resurf. with bit. materials 11.3 mi. sect. St. Rt. No. 76, from Humbolt and extending to Bells Proj. No. SAP-954-C, Crockett and Gibson Counties;

Paul Murphy, Cumberland Furnace, Tenn., LB **$94,394,** crushed stone surf. 4.205 mi. sect. Secondary Rt. 2395 between Oliver Springs and Lake City, from Sulphur Springs and extending towards Lake City, **Proj. No. S-2395 (2), Anderson Co.; LB $84,086,** grav. or chert surf., constr. three bridges on 6.093 mi. sect. Secondary Rt. 3. No. 8040 from State Rte. No. 1, approx. 2 mi. east of Bruceton and extending northward to near Lick Creek Drainage Ditch, Proj. No. S 8040 (1), Benton Co.;

H. F. Ramsey & Co., Asheville, N. C., LB **$134,659,** crushed stone, grav. or chert surf. 4.098 mi. sect. Secondary Rte. 2455, from State Rte. No. 81 at Rocky Fork Creek and extending westward to North Carolina Line, Proj. No. S-2455 (1), Unicoi Co.;

Southern States Paving Co., 900 44th Ave., N., Nashville, Tenn., LB **$172,579,** widen. and resurf. with bit. materials 6 mi. sect. St. Rt. 49, from Springfield and extending to the intersection of St. Hy. 25, Proj. No. SAP-1101-A, Robertson Co.;

R. B. Tyler Co., 1446 Levering St., Louisville, Ky., LB **$77,164,** crushed stone or grav. surf. 3.51 mi. sect. St. Rt. 33 from approx. 2 mi. west of New Tazewell, and extending to point south of Tazewell, Proj. No. SAP-997-A, Claiborne Co.;

Warren Bros., 1900 Hayes St., Nashville, Tenn., LB **$288,619,** bit. materials resurf. 8.641 mi. sect. St. Rt. 24, from Rome and extending to Carthage and a sect. from 1 mi. west of Chestnut Mound and extending to Chestnut Mound, Proj. SAP-575-E; bit. materials surf. 10.144 mi. sect. St. Rt. 24, from Smith County line and extending to Baxter, Proj. No. SAP-123-H, Smith and Putnam Counties;

Wesco Paving Co., Volunteer Bldg., Chattanooga, Tenn. LB **$307,123,** wid'n., resurf. with bit. materials 5.177 mi. sect. St. Rt. Nos. 34 and 36, from Johnson City and extending to Jonesboro-Pickens Bridge Rd., approx. 3 mi. north of the Junction of Rt. Nos. 34 and 36 on St. Rt. No. 36, Proj. SAP-959-B, Washington Co. Bids Aug. 21. CD 8/6, 8/3.

Miller Constr. Co., Murfreesboro, Tenn., CA **$60,098,** water main from pumping station to present sys. and laying extra mains beyond present city limits on east and north;

Bush Building Co., 805 Eighth Ave., N., Nashville, Tenn., CA **$119,470.** water pumping station, filter plant and intake, HARTSVILLE, TENN. City, Hartsville, Tenn. Bids Aug. 26, awarded Aug. 29. CD 8/10.

Lehman-Roberts Co., P.O. Box 2552, Desoto Station, Memphis, Tenn., CA **$185,700,** taxiways imprvs., Municipal Airport, MEMPHIS, TENN. City CIty Hall, Memphis, Tenn. Bids Aug. 21. CD 2/13/52.

Nashville Machine & Supply Co., 123 Third Ave. N., Nashville, Tenn., CA **$172,853,** repair underground steam and water distr. sys., at A & I State University, NASHVILLE, TENN. State, Nashville, Tenn. Bids Aug. 30. CD 7/24.

† **Roehl Constr. Co.,** 625 Atchley St., Knoxville, Tenn. CA **$130,122,** imprv. and constr. 9212 and AEC guard department parking lots, Y-12 Plant, OAK RIDGE, TENN. U.S. Atomic Energy Comn., Oak Ridge, Tenn. Bids Aug. 31.

Robert L. Bernardo, 1085 Forrest St., Memphis, Tenn. CA **$183,000.** WW sys., TRACY CITY, TENN. City, Tracy CIty, Tenn. CD 7/24.

BUILDINGS

LOW BIDS AND CONTRACTS

City, City Hall, Lynchburg, Va., rejected bids July 24, COURT HOUSE, LYNCHBURG, VA., LB **$680,310.** CD 8/7, under LB.

Player Realty & Constr. Co., P.O. Box 707, Fayetteville, N. C., CA **$100,000.** DAIRY PLANT, CLINTON, N. C. Cumberland Dairy Products, Clinton, N. C. CD 8/28.

▲ **H. L. Coble Constr. Co.,** P.O. Box 2040, Greensboro, N. C., CA **$1,000,000.** PLANT, WASHINGTON, N. C. National Spinning Co., 350 Fifth Ave., New York, N. Y. CD 6/2.

H. L. Coble Constr. Co., P.O. Box 2040, Greensboro, N. C., LB **$345,000.** Buena Vista Elementary SCHOOL, WINSTON-SALEM, N. C. City, City Hall, Winston-Salem, N. C. CD 1/13/50.

▲ **Dotterer Eng. Co.,** P.O. Box 495, Charleston, S. C., CA est. **$1,000,000.** Oil CANNING PLANT, CHARLESTON, S. C. Esso Standard Oil Co., Meeting Street Rd., Charleston, S. C. CD 1/13.

Conway-Calmes Co., P.O. Box 1995, Greenville, S. C. LB **$219,470.** WAREHOUSE-OFFICE, PICKENS, S. C. Blue Ridge Electric Co-op, Pickens, S. C. Bids Aug. 27. CD 8/13.

A. K. Abel Constr. Co., P.O. Box 1453, Macon, Ga., CA, **$300,000.** CHURCH, MACON, GA. Cherokee Heights Baptist Church c/o contractor.

Louis Briggs Constr. Co., P.O. Box 570, Macon, Ga., LB, **$194,897,** ice cream and milk PROCESSING PLANT, MACON, GA., Dixie Dairies c/o Kuhlke & Wade, archts., 16 Campbell Bldg., Augusta, Ga. Bids Aug. 25. CD 8/19.

C. A. Kendrick, Griffin, Ga., CA, **$317,321.** Elementary-High SCHOOL, NEWNAN, GA. Coweta Co. Bd. Educ., Newnan,Ga. Bids Aug. 27. CD 8/12.

Braun Constr. Co., 2605 Whitaker St., Savannah, Ga., CA, **$125,000** truck freight TERMINAL, SAVANNAH, GA. R-C Motor Lines, Inc., 109 E. Lathrop St., Savannah, Ga.

Ader Constr. Co., 9700 W. Bay Harbor Dr., Miami Beach, Fla., CA **$350,000,** MOTOR COURT, HALLANDALE, FLA. Benjamin Weissberg, c/o J. Richards Ogden, Jr., archt., 8222 Biscayne Blvd., Miami, Fla.

▲ **Zaret Constr. Co.,** 1901 West Ave., Miami Beach, Fla., CA, **$3,000,000,** 400 RESIDENCES, MIAMI, FLA. Golden Glades Gardens, c/o contractor.

Benedict & Jordan, 2236 N.W. Miami Court, Miami, Fla., CA, **$88,000,** two WAREHOUSES, MIAMI, FLA. Morris Goldfarb, 220 N.W. 21 St., Maimi, Fla.

Benjamin Chaves Constr. Co., 1575 Washington Ave., Miami Beach, Fla., CA, **$300,000** MOTOR COURT,

MIAMI, FLA. Malay Motel, Inc., 8340 N.E. 2 Ave., Miami, Fla.

D. W. Newell, Orlando, Fla., CA, $400,000, 52 RESIDENCES, ORLANDO, FLA. Perry Homes, c/o contractor.

Arthur Perry, Inc., P.O. Box 1577, Jacksonville, Fla., LB, $843,900, HOSPITAL, WINTER PARK, FLA. Winter Park Memorial Hospital, Winter Park, Fla. Bids Aug. 25. CD 8/11.

R. P. Farnsworth & Co., 1515 S. Salcedo St., New Orleans, La. CA $681,000. Industrial Canal Elementary SCHOOL, NEW ORLEANS, LA. Orleans Parish School Bd., 703 Carondelet St., New Orleans, La. CD 8/25, under LB.

W. A. McMichael Constr. Co., P.O. Box 508, Shreveport, La. LB $434,644. concrete block, masonry SCHOOL, Cedar Grove, SHREVEPORT, LA. Caddo Parish School Bd., Court House, Shreveport, La. Wm. S. Evans, 620 Johnson Bldg., Shreveport, La., archt. CD 9/14/51.

J. F. Holley, 905 6 Ave. N., Birmingham, Ala., CA, $250,000, PLANT, BIRMINGHAM, ALA. United Envelope Co., 17 St. and 9 Ave. N., Birmingham, Ala.

A. C. Samford, Inc., P.O. Box 1229, Albany, Ga., CA, $832,147, four SCHOOLS, DOTHAN, ALA. City Bd. Educ., Dothan, Ala. Bids Aug. 27.

▲ **B. & B. Constr. Co.,** P.O. Box 6153, Ardmore Station, Winston-Salem, N. C., CA, $1,447,000, Wherry Act HOUSING Units, FORT McCLELLAN, ALA. U. S. Eng., South Atlantic Div. P. O. Bldg., Atlanta, Ga. Bids Aug. 26. CD 9/1, under LB.

State, State Capitol, Montgomery, Ala., rejected bids July 30, State Health LABORATORY, MONTGOMERY, ALA. LB. $695,300. CD 8/7, under LB.

McDaniel Bros. Constr. Co., 322½ S. Main St., Jonesboro, Ark. LB. $208,340. plant for William Carter Co., SENATOBIA, MISS. City, Senatobia, Miss. Bids Aug. 28. CD 8/11.

Faye Homes Co., 3701 Jefferson Hy., Gretna, La. Owner Builds. $459,000. 51 RESIDENCES, GRETNA, LA.

Haase Constr. Co., P.O. Box 7157, New Orleans, La. CA Est. $85,000. WAREHOUSE, NEW ORLEANS, LA. Southland Canning & Packing Co., 3200 Perdido St., New Orleans, La.

▲ **Vitro Corp. of America,** 233 Broadway, New York, N. Y. CA Est. $25,000,000. has construction management contract for TITANIUM PLANT, consisting of between 20 and 24 large industrial type units, approx. 500,000 sq. ft. floor space, on Simmons and Myers tracts, approx. 200-acres between N. Hawthorne St., South Chickamaugua Creek and spur line of Southern Ry., CHATTANOOGA, TENN. Cramet, Inc. (subsidiary of Crane, Inc.) 836 S. Michigan Ave., Chicago, Ill. CD 3/24, under Tenn., Nashville.

▲ **City,** City Hall, Memphis, Tenn. cancelled bids to have been opened Sept. 15, Negro Teaching HOSPITAL. MEMPHIS, TENN. $2,286,000. Will re-advertise. CD 8/25.

Sam Inman, 3534 Park Ave., Memphis, Tenn. Owner Builds. $400,000. 25 RESIDENCES, Gates Subdivision, MEMPHIS, TENN.

Union Realty Co., 1175 Morehead St., Memphis, Tenn. Owner Builds. $400,000. OFFICE, Latham St., MEMPHIS, TENN.

MIDDLE WEST

BIDS ASKED—BUILDINGS

▲ **Ill., Chicago**—HOUSING—B.A. 10/6—Chicago Housing Auth., 608 S. Dearborn St., Zone 5, 5 apartments, incl. 471 units 2nd phase, Harold L. Ickes Homes, State St. and 22 St. $5,000,000. Skidmore, Owings & Merrill, 100 W. Monroe St., Zone 3, archts. CD 2/2/50.

SOON LETS CONTRACT—BUILDINGS

▲ **Mich., Detroit**—HOSPITAL—St. Clair Hospital of Detroit, 7850 Jefferson Ave., soon lets contract converting, and completing existing structure into brick, steel, concrete hospital, $2,000,000. Alex Kohner, 19111 Asbury Park, Detroit archt. CD 8/6

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—Ohio Turnpike Comn., 139 E. Gay St., Columbus,

Western Contg. Corp., 400 Benson Blvd., Sioux City, Ia., CA $10,030,453, Constr. Sect. 13, four steel beam bridges of from three to four spans each and three rein.-con. box culverts for drainage, incl. grading, drainage, structures, paving, approx. 4.6 mi. Turnpike Roadway from point on Prospect St. northwest of Hudson in Summit Co. and extending eastwardly to point approx. 1.1 mi. east of the Summit-Portage County line in Portage Co.; Constr. Sect. 14, six steel beam bridges from four to five spans each, one steel arch bridge, one plate girder bridge of five spans, the east abutments of the twin bridges over the Cuyahoga River and one rein.-con. box culvert for drainage, incl. constr. grading, drainage, structures, paving approx. 4.64 mi. of Turnpike roadway, from the eastern end of the Cuyahoga River Bridge and extending eastwardly to point on Prospect St. northwest of Hudson Summit Co. Bids Aug. 26. CD 8/31, under LB.

† **OHIO**—Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington, Va.

W. H. Ringwald & Sons Co., Inc., 42 E. 2nd St., Chillicothe, O. LB $73,532. bit. paving, etc. 0.817 mi. Proj. Ohio AA-13 (2), Pike Co. Bids Aug. 28. CD 8/11.

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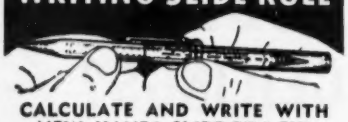

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▲ **OHIO**—State Hy. Dpt., Columbus, **C. S. Replogle Co.**, Circleville, O., CA **$1,500,000**, est. $1,450,000 bridge at junction of Rtes. 7 and 326, at Marietta. Bids Aug. 25. CD 8/31, under LB.

▲ **Thompson Constr. Co.**, 3840 Prospect St., Indianapolis, Ind., and **Stone City Constr. Co.**, Bedford Ind., LB, **$1,286,664**, sewers;

Curry Constr. Co., Bloomington, Ind., LB **$397,000** sewage treatment plant, BEDFORD, IND. Bd. P. Wks., City Hall, Bedford, Ind. Bids Sept. 1. CD 8/11.

Curry Constr. Co., Bloomington, Ind., LB, **$443,000** sewage treatment plant;

Russell S. Davis, Lafayette, Ind., LB, **$165,000** sewerage system, BEECH GROVE, IND. Town Board, Town Hall, Beech Grove, Ind. Bids Sept. 1. CD 8/12.

Union Contracting & Material Co., 30 N. La Salle St., Chicago, 2, Ill., LB, **$106,860**. resurf. E. 79 St. from Stony Island to S. Brandon Aves.; LB, **$90,633**, resurf. N. Wells St. from Taylor St. to W. Wacker Dr.;

Contracting & Material Co., 1235 Dodge St., Evanston, Ill., LB, **$202,851**, resurf. Armitage Ave. from Kedzie to N. Milwaukee Aves., CHICAGO, ILL. City, City Hall, Chicago, Ill. Bids 5/29/52.

BUILDINGS

LOW BIDS AND CONTRACTS

Leslie Colvin, Bd. of Trade Bldg., Indianapolis, 5, Ind., CA, **$400,000** OFFICE addn., INDIANAPOLIS, IND. Grain Dealers Mutual Insurance Co., 1754 S. Meridian St., Indianapolis, Ind. Alden Meranda, Bd. of Trade Bldg. Indianapolis 5, Ind., archt.

G. O. Lewis Co., Battle Creek, Mich. LB **$353,530**. general contract 40-bed HOSPITAL addn., CHARLOTTE, MICH. Hayes-Green-Beach Hospital Assn., Charlotte, Mich. Bids Aug. 25. CD 7/30.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

† **New Mexico**—B.A. 10/15—Bureau Reclamation, Dpt. Interior, Maxwell, earthwork, structures for rehabilitation of Vermejo Diversion Dam, Vermejo Canal and Eagle Tail Canal, Vermejo Proj., near Maxwell, Spec. DC 4035; adv. ENR 9/17. CD 9/7/44.

BIDS ASKED—BUILDINGS

Mo., St. Louis—HOUSING—B.A. 9/24—St. Louis Housing Auth., John J. O'Toole, exec. dir., 901 Washington Ave., Zone 1, 530 dwelling units and other incidental work for completion of Phase 2 of Proj. Mo.-1-5, Hellmuth, Yamasaki & Leinweber, 825 Locust St., Zone 1, archts. CD 2/20/51.

Mo., Festus—SCHOOL—B.A. 9/29—Reorganized School Dist. R-6, Sara M. Wood, secy., primary and elementary school. Plans deposit $200. Barnes & Snipes, 436A Vine St., Poplar Bluff, archts. and assoc. engrs. CD 2/13.

SOON LETS CONTRACT—BUILDINGS

▲ **Minn., St. Paul**—LABORATORY—Minnesota Mining & Mfg. Co., 900 Fauquier St., soon lets contract 1 story, brick, concrete research laboratory unit. Total cost $3,000,000. Giffels & Vallet, Inc., and L. Rossetti, 1000 Marquette Bldg., Detroit, Mich., engrs.-archts. CD 3/24.

Tex., Beaumont—FREIGHT TERMINAL—Central Freight Lines, Box 238, Waco, soon lets contract freight terminal, 4 mi. south of here. $200,000. W. E. Lessing, 3801 Parkwood St., Waco, engr.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Korshoj Constr. Co.**, Blair, Neb., LB **$285,503** repairs to lined channel of Floyd River, Inv. 25-066-54-40, IOWA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Sept. 2. CD 8/17.

† **Pine Bluff Sand & Gravel Co.**, foot of Nebraska St., Pine Bluff, Ark. LB **$223,389**, est. $278,344. pile dike, revetment, Missouri River 27 mi., near Atchison, Kan., MISSOURI and KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Aug. 28. CD 6/1/44, under Missouri.

† **General Electric Co.**, River Rd., Schenectady, N. Y. CA Est. **$110,000**. surveillance radar equip., incl. scanning antenna, radar scope and other electronic equip., Lambert-St. Louis Municipal Airport, ST. LOUIS, MO. Civil Aeronautics Admin., c/o Paul Vinyard, ch. airport controller, Lambert-St. Louis Municipal Airport, St. Louis 21, Mo. CD 6/2/52.

KANSAS—State Hy. Comn., Great Bend, **Rhoades Constr. Co., Inc.**, Newton, Mass. CA **$266,016**. c. conc. wid'n., sheet asph. surf. course 5.091 mi. Proj. 50N-F 062-2 (2), Part II, Barton Co. Bids Aug. 28. CD 8/14.

▲ **Permian Basin Pipe Line Co.**, Midland, Tex. Own Forces. enlargement of permanent type compressor stations, **$325,000**, near Plymouth; **$375,000**, near Seminole; **$410,000**, near Andrews, TEXAS. Grand total $1,100,000. CD 7/17.

XIT Rural Telephone Co-operative, Dalhart, Tex. Own Forces. **$97,775**, 125 mi. rural pole telephone lines, Moore and Hartley Counties; **$118,250**, 150 mi. rural pole telephone lines, Hansford and Hutchinson Counties, TEXAS. H. N. Roberts & Assoc., 1310 Avenue Q, Lubbock, Tex., engrs.

▲ **Texas Bitulithic Co.**, N. W. 5 St., Fort Worth, Tex. CA **$4,889,677**, est. $5,000,000. "B", asph. and concrete for runways, taxiways, aprons, Tye Air Force Base, ENG-41-443-53-65, ABILENE, TEX. U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. CD 9/3, under LB.

Dodds & Wedegartner, Inc., 382 N. Bowie St., San Benito, Tex., LB **$216,318.** storm drainage imprvs., BROWNSVILLE, TEX. City, Brownsville, Tex. Bids Aug. 27. CD 7/21.

▲ **Continental Pipe Line Co.,** subsidiary of Continental Oil Co., Ponca City, Okla., rejected bids Aug. 17, 544 mi. petroleum products pipe line from Billings, Mont. to Spokane, Wash., MONTANA, IDAHO and WASHINGTON. Est. **$20,000,000.** CD 8/20.

† **Western Paving Constr. Co.,** 5105 Washington St., Denver, Colo., CA, **$502,247** strengthening taxiways and parking aprons, Lowry Air Force Base, Inv. 25-066-54-2, DENVER, COLO. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids July 28. CD 7/1, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **D'Arcy Leck Constr. Co.,** 2838 Stevens Ave., Minneapolis, Minn. CA **$1,588,000.** general contract HIGH SCHOOL, RICHFIELD (P. O. MINNEAPOLIS), MINN. Bd. Educ., H. E. Rumpel, supt., Richfield, Minn. CD 9/2, under LB.

Schneider Bros. Constr. Co., 421 W. Missouri St., Kirksville, Mo. CA **$325,000.** combination elementary and high SCHOOL, NOVINGER, MO. Bd. Educ. Reorganized School Dist. R-1 Adair Co., O. T. Hoffman, pres., Novinger, Mo. Bids Aug. 14. CD 7/24.

H. C. Frickey, Alliance, Neb., CA **$300,000.** branch STORE, ALLIANCE, NEB. Safeway Stores, Inc., 4 and Jackson Sts., Oakland, Calif.

▲ **Wescott-Bowen Constr. Co.,** 1734 R St., Lincoln, Neb. CA **$1,245,140,** general constr. Southeast Junior-Senior HIGH SCHOOL, LINCOLN, NEB. Bd. Educ., 720 S. 22 St., Lincoln, Neb. Bids Aug. 20. CD 9/1, under LB.

▲ **Fluor Co. Ltd.,** Elk City, Okla. CA **$2,150,000.** expansion natural gas processing PLANT, incl. 6 1,760 hp. compressors, 62 ft. absorption column, surge tanks, propane dryer, etc., ELK CITY, OKLA. Shell Oil Co. and Associated Companies, Elk City, Okla. Work under way. CD 7/6/51.

† **Dolph Constr. Co.,** 3901 Elm St., Dallas, Tex. LB **$259,000.** 2 story, 57x183 ft. structural steel, masonry OFFICE-LABORATORY, at Ordnance Aerophysics Laboratory area, NOY 77868, Spec. No. 38358, DAINGERFIELD, TEX. U. S. Govt., 8th Naval Dist., Bldg. 16, Naval Station, New Orleans, La. Bids Aug. 27.

▲ **Foster Wheeler Corp.,** 2118 Fannin St., Houston, Tex. CA Approx. **$3,750,000.** completion of REFINERY program, incl. fluid catalytic cracking unit, catalytic reformer unit, polymerization unit, new boiler plant, laboratory, 834,000 bbl. capacity steel tankage, EL PASO, TEX. The Texas Co., 720 San Jacinto St., Houston, Tex. Work under way. CD 8/31.

A.A.A. Iron & Metal Co., Grand Prairie, Tex. Day Labor. **$85,000,** PLANT imprvs., GRAND PRAIRIE, TEX.

Fred Avanzini, 1113 Kinley Lane, Houston, Tex. Own Forces. **$300,000.** 6 DWELLINGS, HOUSTON, TEX. CD 7/27.

Sharp Constr. Co., 1242 Chippendale St., Houston, Tex. CA **$369,415,** 37 DWELLINGS, HOUSTON, TEX. Leonard S. Sharp, 1242 Chippendale St., Houston, Tex. CD 7/27.

Marvin Henry, Builders, Inc., 1219 W. 43 St., Houston, Tex., Owner Builds. **$345,000.** 35 DWELLINGS, HOUSTON, TEX.

Kilgore College, Kilgore, Tex. rejected bids. 2 story students union, KILGORE, TEX. Est. **$300,000.** CD 7/30/52.

† **Campbell & Kay,** Box 836, Tyler, Tex. LB **$685,394.** Group 1 Bldgs., PLANT No. 3, Longhorn Ordnance Works, Inv. No. ENG-34-066-54-7, MARSHALL, TEX. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Aug. 27.

Ortz Constr. Co., Rittiman Rd., San Antonio, Tex. Owner Builds. **$310,000.** 40 DWELLINGS, SAN ANTONIO, TEX. CD 8/13.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Ariz., Yuma**—RESEARCH and DEVELOPMENT TEST FACILITIES—B.A. 9/24—U.S. Eng., 751 S. Figueroa St., Los Angeles, Calif., research and development test facilities, $200,000. CD 12/11, under Public Buildings.

† **Calif., Miramar**—HIGH SPEED APRON FUELING—B.A. 10/1—Dpt. Navy, San Diego, high speed apron fueling at Naval Air Station, NOY 76831, Spec. 37488, $200,000. Plans deposit $40. CD 9/22/52.

† **Oregon**—B.A. 10/29—U.S. Eng., Pittock Block, Portland, either 2 or 3, 370-ton double trolley electric bridge cranes, two 350-ton lifting beams and one 656-ton lifting beam, The Dalles Dam. CIVENG-35-026-54-31.

BIDS ASKED—BUILDINGS

▲ **Calif., Los Angeles**—HOUSING—B.A. 9/29—Housing Auth. of City of Los Angeles, 1401 E. First St., Pacoima Low-Rent Housing, Pacoima. $1,000,000. Arthur Gallion & Victor Gruen, 8460 Santa Monica Blvd., archts. CD 4/16, under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Detweiler & Detweiler, Inc.,** Box 870, Twin Falls, Idaho, CA, $1,299,041, central heating plant, Mountain Home Air Force Base, ENG-45-165-53-61, MOUNTAIN HOME, IDAHO. U.S. Eng., City-County

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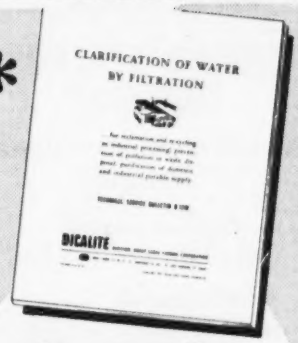

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Airport, Walla Walla, Wash. Bids July 16, awarded Aug. 19. CD 7/22, under LB.

▲† **Morrison-Knudsen Co. Inc., and J. A. Terteling & Sons,** 314 Broadway, Boise, Idaho LB, $6,112,013, est. $6,772,631. exten. apron, runway and taxiways at Mountain Home Air Force Base, Inv. 54-2, MOUNTAIN HOME, IDAHO. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Sept. 1.

† **General Electric Co.,** Public Service Bldg., Portland, Ore., CA, $789,498. autotransformers for Chief Joseph Dam power lines, Douglas Co., Inv. 7030, WASHINGTON Bonneville Power Admin., 827 N.E. Oregon St., Portland, Ore. Awarded Aug. 28. L. C. Stewart, 827 N.E. Oregon St., Portland, Ore., engr. CD 8/10.

Milone & Tucci, 3215 "M" St., Tacoma, Wash., CA, $139,689. 27,000 lin. ft. storm sewers, VANCOUVER, WASH. City, City Hall, Vancouver, Wash. Bids Aug. 24. CD 8/6.

† **English Electric Export & Trading Co. Ltd.,** 23 Beaver St., New York, N. Y., CA $639,915, autotransformers for McNary Dam power lines, Inv. 7030, Umatilla Co., OREGON. Bonneville Power Admin., 827 N.E. Oregon St., Portland, Ore. Awarded Aug. 28.

▲† **U. S. Eng.,** Pittock Block, Portland, Ore., cancelled bids to have been opened Sept. 9. intake structures and gate structures, The Dalles Dam, Civeng-35-026-54-5, Wasco Co., OREGON. $5,000,000. Will re-advertise. CD 7/27.

CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles,

John Strona, 1538 Philadelphia St., Pomona, Calif., LB $136,914, redecking 39 timber trestle bridges between Barstow and Essex, San Bernardino Co. Bids Aug. 27. CD 8/13.

CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento,

Gene Richards Inc., P.O. Box 1349, Fresno, Calif., LB, $138,179, surf. 5 mi. between FAS Rt. 141 and Tulare-Fresno Co. near Dinuba, Tulare Co. Bids Aug. 26. CD 8/13.

H & H Constr. Co., 2407 E. Artesia St., Long Beach, Calif., LB, $79,733. imprv. Market St. between Cherry and Lewis Sts., LONG BEACH, CALIF. City Council, 205 W. Broadway, Long Beach, Calif. Bids Aug. 21.

Flo-Master, Inc., 11751 Vose St., North Hollywood, Calif. LB, $128,894, est. $115,496, sanitary sewers in Sunset Plaza Dr. and Evansview Dr., LOS ANGELES, CALIF. City, City Hall, Los Angeles, Calif. Bids Aug. 26. CD 4/13.

† **U.S. Eng.,** 751 S. Figueroa St., Los Angeles, Calif. cancelled bids to have been opened Aug. 28, addnl. refueling facilities, ENG-04-353-53-85, MARCH AIR FORCE BASE, CALIF. Bids Aug. 28. CD 8/5.

Dan Prodanovich, 750 81 Ave., Oakland, Calif. LB, $71,458, sanitary sewers in Park Blvd., Shelterwood Drive, etc. R.I. 30085, OAKLAND, CALIF., City, City Hall, Oakland, Calif. Bids Aug. 27.

L. C. Smith Co., 225 19 Ave., San Mateo, Calif., LB $69,964, extending San Bruno Ave. from Acadia to Juniaero Serra Blvd., SAN BRUNO, CALIF. City, City Hall, San Bruno, Calif. Bids Aug. 26.

M. H. Golden Constr. Co., 3485 Noel St., San Diego, Calif., CA, $418,000, seaplane ramp and floating wharf, SAN DIEGO, CALIF. Consolidated Vultee Aircraft Corp., 316 S. Pacific Coast Hy., San Diego, Calif. Awarded Aug. 3.

Chas. L. Harney, Inc., 575 Berry St., San Francisco, Calif., LB, $86,550, track removal, reconstr. pavement on Tork St. between Divisadero and Arguello Sts., etc. SAN FRANCISCO, CALIF. Dpt. P. Wks., City Hall, San Francisco, Calif. Bids Aug. 26. CD 8/13.

Coast Pipeline Contractors, 580 Bragato Road, Belmont, Calif., LB, $82,046, laying welded steel water pipe from Major's Creek to line near Wilder Ranch, SANTA CRUZ, CALIF. City, City Hall, Santa Cruz, Calif. Bids Aug. 25, CD 8/13.

Spears Constr. Co., Box 1124, Modesto, Calif., LB, $63,000, swimming pool at Deuel Vocational Institute, TRACY, CALIF. State Div. Architecture, P. Wks. Bldg., Sacramento, Calif.

Nomellini Constr. Co., P. O. Box 1177, Stockton, Calif., LB, $184,000, sewage disposal and water supply California Medical Facility, VACAVILLE, CALIF. State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Bids Aug. 25. CD 9/5.

Heisler & Woods, 229 S. Hoyt Ave., El Monte, Calif. LB, $67,189, installing water lines in various streets Proj. No. 2, WHITTIER, CALIF. Dpt. P. Wks., 205 N. Greenleaf Ave., Whittier, Calif. Bids Aug. 24.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Ross B. Hammond,** 1241 N. Williams St., Portland, Ore., CA $1,269,898, concrete RETIREMENT HOME, MILWAUKIE, ORE. Willamette View Manor Assn., Milwaukie, Ore. Walter E. Kelly, 808 S.E. 28 St., Portland, Ore., archt. CD 8/26 under LB.

▲ **Woodman Building Co.,** 241 S. Robertson Blvd., Beverly Hills, Calif., CA, $1,836,000, 180 stucco DWELLINGS, Jumella, Quartz, Hotello, Madona and Corbin Aves., CANOGA PARK, CALIF. Salcrest Assoc., 241 S. Robertson Blvd., Beverly Hills, Calif.

Kemp Bros., 8750 Mettler St., Los Angeles, Calif., CA, $341,200, SCIENCE BLDG. at Fullerton Junior College, FULLERTON, CALIF. Fullerton Union School Dist., E. Chapman Ave., Fullerton, Calif. Bids Aug. 19. CD 7/21.

M & K Corp., Financial Center Bldg., San Francisco, Calif., LB, $626,013, LAUNDRY at Napa State Hospital, IMOLA, CALIF. State Div. Architecture P. Wks. Bldg., Sacramento, Calif. Bids Aug. 25. CD 8/5.

Tavares Constr. Co. & L. C. Burgews, 1150 Silverado St., San Diego, Calif., CA, $410,102, 50 stucco DWELLINGS, in Clairemont Manor Tract No. 3, LA JOLLA, CALIF. Clairemont Development Co., Box 569 La Jolla, Calif.

Bechtel Corp., 3780 Wilshire Blvd., Los Angeles, Calif., CA, $250,000, 102,460 ft. WAREHOUSE, 6300 Shelia St., LOS ANGELES, CALIF. Lever Brothers Co., 6300 Shelia St., Los Angeles, Calif.

O. K. Earl, Jr., 918 E. Green St., Pasadena, Calif., CA, $125,000, 171x213 ft., concrete MACHINE SHOP, LOS ANGELES, CALIF. Superior Tool & Die Corp., 4116 San Fernando Rd., Los Angeles, Calif. Frank O. Bigelow, 918 E. Green St., Pasadena, Calif. archt.

Area Development Co., c/o owner, $329,000, 47 stucco DWELLINGS, Frontier, 30 and 31 Sts., PALMDALE, CALIF. Urban Homes, 116 S. Stoneman St., Alhambra, Calif.

Coordinated Constr. Co., 12901 S. Crenshaw Blvd., Hawthorne, Calif., CA, $90,000, 26,580 sq. ft., concrete FACTORY, 16614 Garfield Ave., PARAMOUNT, CALIF. Caldwell & Dague, 2445 E. 57 St., Los Angeles, Calif.

Campbell Constr. Co., 800 "R" St., Sacramento, Calif., CA, $380,947, Pheobe Aperson Hearst Elementary SCHOOL, SACRAMENTO, CALIF. Sacramento City Unified School Dist., 1619 N. St., Sacramento, Calif. CD 5/23/51.

† **L. C. Anderson Co.,** 3040 Hancock St., San Diego, Calif., CA. $860,700, addnl. TRAINING FACILITIES Naval Training Center, NOY, 74058, Spe. 35093, SAN DIEGO, CALIF. Eleventh Naval Dist., San Diego, Calif. Bids Aug. 18. CD 8/27, under LB.

Currie Homes, Inc., 13421 San Antonio Dr., Norwalk, Calif., CA, $364,800, 38 stucco DWELLINGS, San Fernando Mission Rd., Ludlow and Amesroy Aves., SAN FERNANDO, CALIF. Granada Hills Ltd., 13421 San Antonio Dr., Norwalk, Calif.

▲ **Biltwell Constr. Co.,** 4745 Geary Blvd., San Francisco, Calif., CA, $1,209,777, Alemany HOUSING Proj., Cal 1-16, SAN FRANCISCO, CALIF. Housing Auth. of City and San Francisco County, 440 Turk St., San Francisco, Calif. Bids Aug. 25. CD 8/6.

▲ **Nylon P. Hurd,** 1317 Satiago Ave., Santa Ana, Calif., LB, $1,030,000, 3 and part 4 story, bsmnt., 37,000 sq. ft. HEALTH BLDG., SANTA ANA, CALIF. Bd. Supervs. Orange Co. Court House, Santa Ana, Calif. Bids Aug. 25. CD 7/27.

G. G. Constr. Co., 356 Sepulveda Blvd., Manhattan Beach, Calif. Owner Builds, $872,998, 94 stucco DWELLINGS, Kathryn and Evvalyn Aves., TORRANCE, CALIF.

† **James P. Morton,** 33 Clay St., Placerville, Calif., LB, $295,435, Sch. A $315,640, Sch. B $319,650, Sch. C, 2-unit NCO HOUSING, other buildings, barracks, etc., ENG-54-5, TWO ROCK RANCH STATION, CALIF. U. S. Eng., 180 N. Montgomery St., San Francisco, Calif. Bids Aug. 27. CD 8/13.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Ont., Ottawa—BUILDINGS—B.A. 9/22—Defence Constr. Ltd., 40 Eglinton Ave. E., Toronto, various buildings at R.C.A.F. Station, Uplands, $400,000. Plans deposit $100. R. P. Opie, c/o owner, engr.

BIDS ASKED—BUILDINGS

Ont., Toronto—HOSPITAL—B.A. 9/22—Dpt. P. Wks., Parliament Bldg., 3 story, no bsmnt., 60x600 ft., concrete frame, brick Ontario Hospital addn., 999 Queen St. W. $750,000. Plans deposit $50. Mathers & Haldenby, 15 St. Mary St., archts. G. N. Williams, deputy minister and ch. archt.

Ont., Deep River—HOUSING—B.A. 9/24—Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, 64 housing units and services, Job No. 14/53. $700,000. Plans deposit $100. R. P. Opie, c/o owner, engr.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **ONTARIO**—Dpt. Highways, Prov. Govt., Toronto, **Standard Paving Ltd.,** 402 Harbour Commission Bldg., Toronto, Ont., CA, $170,000, hot mix, Finch Chesterville 6.7 mi., Ottawa; CA, $250,000, hot mix T.C. Hy. 17, Vermilion River easterly 10 mi. Sudbury;

H. J. McFarland Constr. Co. Ltd., 5 Talbot St., Picton, Ont., CA, $150,000, hot mix 7.1 mi. T.C. Hy. 7, Bathurst Maberly, Kingston;

Peel Constr. Co., 75 Main St. W., Brampton, Ont., CA, $100,000, hot mix 5.2 mi. Hy. 44 Carp westerly Ottawa;

Dibblee Constr. Co. Ltd., 384 Bank St., Ottawa, Ont., CA, $200,000, hot mix pavement 8 mi. T.C. Hy. 17 Plantagnet 3 mi. east of Alfred Ottawa;

M. G. Henniger, Union St., Smith Falls, Ont., CA, $175,000, resurf. Hy. 15, Stittsville to Ashton 10.8 mi. Ottawa. Bids Aug. 21. Grand total $1,045,000. CD 8/7.

▲ **Bigott Constr. Co. Ltd.,** Pigott Bldg., Hamilton, Ont., LB, $1,594,802, 1000x200 ft. East Barton Reservoir, 28 ft. deep, 35 m.g. capacity, HAMILTON, ONT. City, J. F. Berry, clk., City Hall, Hamilton, Ont. Bids Aug. 27. CD 7/22.

BUILDINGS

LOW BIDS AND CONTRACTS

Camston Ltd., 2916 Bloor St. W., Toronto, Ont., LB, $225,000, STORAGE, Tippet Rd. and Wilson Ave., TORONTO, ONT. Tippet-Richardson Ltd., 53 Ontario St., Toronto, Ont. Margison & Babcock, 119 Isabella St., Toronto, Ont., engrs.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **Alaska** — TRANSFORMERS — B.A. 10/22 — Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars, Seattle, Wash., or other west coast United States port, or f.o.b. cars Eklutna, two 25-kva, 7,200- to 120/240-volt, single-phase, 60-cycle, noninflammable liquid-immersed, self-cooled distribution transformers and two 16-kilowatt, 133-volt, 121-ampere (continuous) 1.10-ohm resistors for Units 1 and 2, Eklutna Power Plant, Eklutna Proj., Inv. No. DS-4034. CD 2/11/49.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Collins-Clements**, 215 3 Ave., Anchorage, Alaska, LB $93,896, est. $90,945, transmitter, receiver and navigation aids bldg., roads, parking areas and antenna bases for AACS facilities, Elmendorf Air Force Base, ENG-95-507-54-33, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Aug. 28. CD 8/19.

Proposed Projects

WATER SUPPLY

Calif., Paradise—Paradise Irrigation Dist., Paradise, voted $400,000 bonds, water pipe line between Magalia Reservoir and Paradise, CD 7/20, under Earthwork, Waterways.

▲ **Neb., Las Vegas**—Las Vegas Water Dist., Las Vegas, $8,700,000 bond election Sept. 30, water sys.

Tex., Houston—Harris County Fresh Water Supply Dist. 37, Court House, voted bonds, water mains and distr. sys. $225,000; water pumping unit and storage, $150,000, near here. Frank J. Metyko, Scanlan Bldg., consult. engr. CD 9/5/52.

Wash., Kirkland—Water District 72, Kirkland, water system in Juanita Area between 116 and 150 Sts., 84 Ave. N.E. to 136 Ave. $390,000. H. O. Sisler, Kirkland, consult. engr. CD 10/9/46.

Wash., Lebam—Lebam-Frances Holcomb Water Dist., Lebam water supply and distr. system, $300,000 Parker, Hill & Ingman, 1728 E. Madison St., Seattle, consult. engrs.

SEWERS, WASTE DISPOSAL

Ark., Hot Springs—City, City Hall, voted bonds Aug. 25, rehabilitation of 2 sewer treatment plants, 1 relay line, $985,000. Marion L. Crist & Assocs., Union Life Bldg., Little Rock, consult, engrs., CD 7/2/52.

Calif., Bakersfield—Kern Co. Sanitation District, 1100 26 St., voted $300,000 bonds, installing sewerage system in Ridge Crest Sanitation Proj. $911,000. R. E. White, 1716 Oak St., Bakersfield, consult. engr. CD 7/24.

Ill., Homewood—Village, Village Hall, sewerage treatment plant, sanitary sewers $750,000. Greeley & Hanson, 220 S. State St., Chicago, Zone 4, consult. engrs.

Ind., Cambridge City—Town, Gene Huffman, town bd. pres. plans by Henry Steeg & Assocs. Architects & Builders Bldg., Indianapolis, sewage plant and new sewers, $350,000.

▲ **Mass., Dracut**—Town, Bd. Selectmen, Town Hall, Contr. 1, sewerage sys., Dracut Center, $312,000; Contr. 2, sewerage sys., Navy Yard Sect., $650,000; Contr. 3, sewerage sys., Collingville Sect., $548,000; Contr. 4, sewerage sys., $60,000; Contr. 5, sewerage sys. outlying sect. of Navy Yard, $175,000. Gibbs & Hill, Inc., Pennsylvania Station, New York, N. Y., consult. engrs. CD 9/5/50.

Mich., Livonia—City, Marie W. Clark, clk., 11,800 ft. sewer mains in Inkster, Reddon, Hubbard and Garden Rds., $310,500; 29,200 ft. lateral sewers various streets, $230,000. Herald F. Hamill, 203 Conner Bldg., Plymouth, consult. engrs.

Mo., Kansas City—Jackson Co., Court House, 12 and Oak Sts., new sewer dist., 85-97 and Troost-State Line, and disposal plant, $300,000, Wm. Prichard & Assoc., 206 N. Liberty St., Independence, consult. engrs. Harvey A. Jones, c/o owner, engr.

Mo., Knobnoster—City, B. E. Carr, clk., sanitary sewerage sys., $107,622. CD 7/23/52.

▲ **Pa., Bethel**—Municipal Auth. of Bethel Boro, Municipal Bldg., W. Library and Lytle Sts., plans by Chester Engineers, 210 E. Parkway, Pittsburgh, sewage treatment plant and pumping stations, $4,500,000.

R. I., East Greenwich—Town, Bd. Selectmen, Town Hall, sewage plant renovations and sewer extens. $200,000. Waterman Eng. Co., 87 Weybosset St., Providence, consult. engr. CD 4/8.

▲ **R. I., Johnston**—Town, Sewer Comn., Gustave Freiberger, chn., sewerage sys., treatment plant, $550,000, pump station, $35,000, force main, $70,000, gravity mains, $1,316,000. Thomas Worcester, Inc., 85 State St., Boston, Mass., consult. engr.

Tex., Dallas—Mayflower Investment Co. and Carr P. Collins, 912 Commerce St., sanitary sewers, $67,500; storm sewers, $60,000, area of Plymouth Park Community.

Tex., Houston—Harris County Fresh Water Supply Dist. 37, Court House, voted bonds sanitary sewer collection sys. $200,000; sewage disposal plant, $150,000, near here. Frank J. Metyko, Scanlan Bldg., consult. engr. CD 9/5/52.

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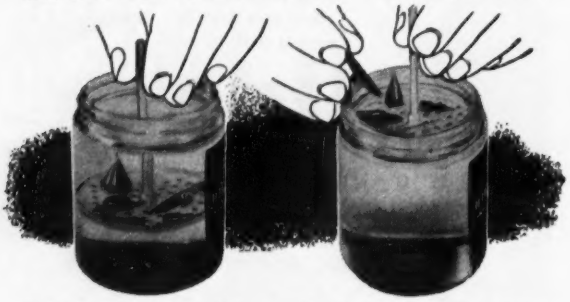

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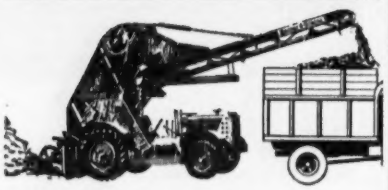

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Tex., Houston—J. H. McNaughton, c/o First Mortgage Co. of Houston, Inc., City Natl. Bank Bldg., storm sewers and drainage, $65,000; sanitary sewers, $67,500, off Memorial Dr., near Camp Hudson Boys Camp.

Tex., Jacksonville—City, storm sewers, $75,000; sanitary sewer collection system extensions and imprvs. $75,000.

Tex., San Antonio—H. B. Zachry Properties, Inc., Transit Tower Bldg., Unit No. 1, sanitary sewers, $66,500; storm sewers, $60,000; Unit 2, sanitary sewers, $70,000; concrete storm sewers, $65,000, off Military Hy. in Northridge Park. Mitchell & Hunt, Transit Tower Bldg., consult. engr.

Tex., San Antonio—H. B. Zachry Properties Inc., Transit Tower Bldg., Unit 2, vitr. and concrete sanitary sewers, $70,000; concrete storm sewers $65,000, just north of 212-acre of Unit No. 1 in Northwood Estates.

Ont., Trafalgar—Trafalgar Twp., S. A. Featherstone, clk., Trafalgar, sewage disposal plant, $502,000 Gore & Storrie, 1130 Bay St., Toronto, consult. engrs.

BRIDGES

▲ O., Dayton—Comrs. Montgomery Co., Court House, replace Wagner Ford Bridge over Baltimore & Ohio R.R. tracks, $350,000; replace Needmore Rd. Bridge over Great Miami River, $600,000; replace Broadway Bridge over Great Miami River, $800,000; replace Harshman Bridge over Mad River at Riverside, $600,000. Ray Yount, Third Natl. Bldg., consult. engr. Carl H. Bauer, co. engr. CD 2/21/45.

Tex., San Antonio—Bexar Co., Precinct No. 1, Dan Traugott, comr., Court House, bond election Oct. 3, W. Commerce St. grade separation. $300,000. C. I. Swan, co. road engr. CD 8/20.

STREETS AND ROADS

▲ Minn., Minneapolis—City, Mrs. A. Finkle, clk., repave Lake St. between Hennepin Ave. and 29 Ave. South, $1,000,000. H. Erickson, city engr. CD 5/13/52.

Minn., Minneapolis—City, Bd. Park Comrs., C. E. Doell, supt., City Hall, straightening West River Rd. between 24 St. and Franklin Ave., 4 blocks, paving, curb, constr. underpass to take blvd. traffic under Franklin Ave. Bridge, $180,000 first stage, $250,000 complete.

Tex., Lubbock—City, 50 blocks street paving, grading, drainage, caliche base, quadruple asph. topping, concrete curbs and gutters, $175,000. W. B. Holmes, city engr.

Alaska, Juneau—City Hall, voted bonds Aug. 18, repair, imprv. streets and sidewalks. $249,500. CD 8/7.

EARTHWORK, WATERWAYS

Neb., Royal—Nebraska State Game & Fish Comn., Capitol Bldg., Lincoln, development of Grove Lake near here, $100,000.

▲ Tex., Victoria—West Calhoun County Navigation Dist., Port Lavaca, 13 mi. canal from Intracoastal Canal waterway and running to Union Carbide & Carbon Co. Chemical plant, near here, $1,300,000; 19 mi. canal designated to connect the entire Intracoastal Waterway with Victoria area and would be the finality of a canal sys. offshoot between Florida and Brownsville, $2,500,000.

▲ Wisconsin—Wisconsin Valley Improvement Co., 327 3 St., Wausau, 7 power dams in Marathon and Lincoln Counties. $8,000,000.

▲ Alberta—Calgary Power Ltd., 149 First Ave. W., Calgary, hydro-electric power plant at Lake Wabamun 55 mi. west of Edmonton, $8,000,000. CD 8/25/48, under Industrial Buildings, Calgary, Alta.

PUBLIC BUILDINGS

Calif., Palmdale—HOSPITAL—Antelope Valley Hospital Dist., Palmdale, voted $300,000 bonds, hospital, $800,000. CD 7/27.

Del., Dover—SCHOOL—Wm. Henry Comprehensive High School and State Bd. Educ., Dover, plans by Victorine & Samuel Homsey, 917 Gilpin Ave., Wilmington, Wm. Henry Comprehensive High School. $500,000.

Del., Georgetown—SCHOOL—William C. Jason Vocational School, Selbyville, and State Bd. Educ., Dover, plans by Victorine & Samuel Homsey, 917 Gilpin Ave., Wilmington, William C. Jason School addn. $620,000.

Del., Laurel—SCHOOL—Laurel Special School District, Laurel, Laurel School addns., alterations. $550,000. Laurel Negro School addns., alterations. $300,000.

Del., Newport—SCHOOL—Absalom Jones School District, Newport, plans by G. Morris Whiteselde 2nd, DuPont Bldg., Wilmington, Absalom Jones School. $400,000.

Del., Wilmington—SCHOOL—Oak Grove School District, Elsmere, Wilmington, plans by Stanhope & Manning, 902 Orange St., Oak Grove School addn. $700,000.

▲ Ga., Athens—HOUSING—Athens Housing Auth., Athens, plans by Kuhlke & Wade, Campbell Bldg., Augusta, Housing Projects GA3-3 and GA 3-4, 286 housing units, $2,600,000.

▲ Ga., Atlanta—HOUSING—Atlanta Housing Auth., Trust Co. of Georgia Bldg., plans by Toombs & Co., and Abreu & Robeson, 141 Walton St. NW., A Housing Project GA6-7, 510 housing units. $4,500,000.

▲ Idaho, Kellogg—SCHOOLS—School Bd., Kellogg voted bonds high school $1,000,000, Junior High school, $500,000.

Idaho, Nampa—SCHOOL—School Bd., Nampa, high school. $640,000.

Ill., Skokie—SCHOOL—School District 69 c/o Lincoln School, Skokie, plans by Alfred P. Allen, 225 N. Michigan St., Chicago, Zone 1, grade school, Main St near McCormick Blvd., $400,000.

Kan., Palco—SCHOOL—Bd. Educ. plans by Benedick & Hines, 254 Laura St., Wichita, high school. $495,000. CD 4/8.

▲ **Me., Portland**—SCHOOL—State, Norman U. Greenlaw, Dpt. Institutional Service, State House. Augusta, plans by Stevens & Saunders, 187 Middle St., Maine School for the Deaf, Mackworth Island. $1,000,000. CD 1/29/53, under Commercial Buildings.

▲ **Mo., Independence**—POWER PLANT—City, c/o Mayor Robt. P. Weatherford, $1,500,000 bond election Oct. 6, municipal electric power plant expansion, add 5,000 kw turbo- generator, Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs. CD 7/15.

▲ **N. C., Goldsboro**—HOUSING—Goldsboro Housing Auth., Goldsboro, plans by W. B. Griffin, Edwards Bldg., and Edwards & McKimmon, 743 W. Johnson St., Raleigh Housing Proj. NC 15-3, 115 housing units. $1,000,000.

N. C., Rocky Mount—HOUSING—Rocky Mount Housing Auth., Rocky Mount, plans by John J. Rowland, Kinston, Housing Proj. NC 19-1, 110-units. $950,000.

▲ **N. C., Winston-Salem**—HOUSING—Winston-Salem Housing Auth., Reynolds Bldg., plans by Northup & O'Brien, Reynolds Bldg., Housing Proj. NC 12-6, 244 units, $2,150,000.

O., Apple Creek—HIGH SCHOOL—Bd. Educ., Southwest Local School Dist., Apple Creek, high school. $690,000.

O., Orrville—HIGH SCHOOL—Bd. Educ., Orrville, high school. $750,000. CD 11/11/48.

Pa., Wagontown—SCHOOL—Joint School Bd. of Sadsbury, West Brandywine and West Caln Twps., Box 729, Coatesville, plans by Buchart Eng. Corp., 611 W. Market St., York, Consolidated Elementary School. $650,000.

Tex., Seminole—SCHOOL—Seminole Common Consolidated School Dist., Seminole, voted bonds Aug. 29, school addns., primary, elementary and junior high school addns. and vocational shop. $475,000. Buford & Feinberg, 326 Interurban Bldg., Dallas, archts. CD 4/27.

Utah, Tropic—SCHOOL—Garfield Co., Panguitch, plans by Fred Markham, 45 N. University St., Provo, Tropics Elementary Secondary School. $500,000.

▲ **Va., Norfolk**—HIGH SCHOOL—City School Bd., 402 E. Charlotte St., plans by Rudolph, Cooke & Van Leeuwen, Inc., 355 Monticello Arcade, 1 and 2 story, masonry North Side Junior High School. $1,500,000. Fraioli-Blum-Yesselman, 1214 Granby St., consult. engrs.

Wash., Spokane—LIBRARY—Gonzaga University, E. 502 Bone St., plans by J. W. Maloney, Central Bldg., Seattle, Zone 4, library. $500,000.

Wis., Cumberland—HOSPITAL—City plans by W. M. Ingemann, 345 Minnesota St., St. Paul, Minn., and Hammel & Green 608 Turnpike Rd., Minneapolis, Minn., assoc. archts., 22-bed community hospital, $400,000.

▲ **Wis., Mendota**—COLONY and TRAINING SCHOOL, etc.—State Dpt. P. Welfare, State Capitol, Milwaukee, plans by Roger C. Kirchhoff, state archt., Madison, Central Wisconsin Colony and Training School $6,000,000; power plant, $1,000,000. Battey & Childs, 231 S. La Salle St., Chicago, Ill., consult. engr.

COMMERCIAL BUILDINGS

▲ **Ark., Little Rock**—OFFICE—National Old Line Life Insurance Co., c/o Yandell Johnson, archt., 113 E. 9 St., 5 story, 60,000 sq. ft. office, $1,000,000. Pettit & Pettit, Wallace Bldg., consult. engr. H. Allen Gibson, Seigler Bldg., struct. engr. CD 5/6.

▲ **Calif., San Mateo**—APARTMENT HOUSE—Barrett & Hilp, 818 Harrison St., San Francisco, luxury apartment house development on Old Talbot Properties, $1,000,000. CD 5/8/46.

Ind., Indianapolis—HOUSING UNITS—Indiana Central College, 4001 S. Otterbein Ave., plans by Paul V. Matkin & Assocs., 5878 Ralston Ave., defense housing units in University Heights, $750,000.

Ind., Indianapolis—APARTMENT—Mutual Development Trust, 19 E. 34 St., cooperative apartment project, E. 46 St. $850,000.

Kan., Wichita—INFIRMARY—Masonic Bd., c/o Bruce Newton, pres., 1500 N. Vassar St., plans by Thomas, Harris & Calvin, 321 W. 2 St., 3 story, 36,000 sq. ft., masonry infirmary for Masonic Home, $500,000.

Mich., Ishpeming — HOSPITAL — Ishpeming-Negaunee Hospital, D. D. Satterly, pres. Bd. Trustees, Ishpeming, brick, steel hospital addns., alterations, $650,000.

▲ **Mich., Port Huron**—Y.M.C.A. BLDG.—Young Men's Christian Assn., Milton W. Bush, pres., Sixth St., brick, steel, concrete Y.M.C.A. Bldg., $1,250,000. CD 2/27.

N. Y., New York—LOFT and STORE—Garment Center Capitol, Inc., 512 Seventh Ave., Zone 36, plans by M. Milton Glass, 31 Union Square, Zone 3, loft and store bldg. alterations, 500 Seventh Ave. $300,000.

N. Y., New York—APARTMENT—Joseph Portman, 3525 Jerome Ave., plans by I. L. Crausman, 332 E. 149 St., Zone 51, 6 story apartment, 1067-71 Madison Ave. $630,000.

N. Y., Yonkers—APARTMENT—Irving Hentman, c/o Tito DiVincenzo, archt., 2 Columbus Circle, New York, Zone 19, 6 story apartment, Hawley Terrace, $500,000.

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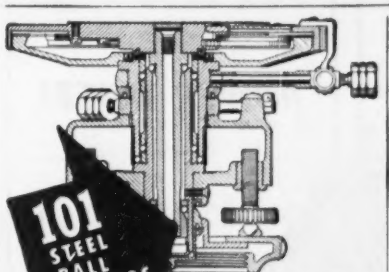

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▲ **Pa., Phila.**—MEDICAL CENTER—A. F. L. Central Labor Union, 121 N. Broad St., medical center, $1,000,000.

Pa., Phila.—FUNERAL HOME—Joseph Levine & Sons, Inc., 1512 N. Broad St., plans by David Supowitz, 246 S. 15 St., funeral home. $300,000.

Pa., Phila.—STORE—Owner, c/o Herman A. Schuh, archt., 5600 Greene St., department store and parking lot. $650,000. J. C. Penney Co., lessee.

Pa., Phila.—OFFICE—Tradesman Land Title Bank & Trust Co., 16 and Walnut Sts., office repairs $500,000.

▲ **Pa., Phila.**—DORMITORY—University of Pennsylvania, 209 S 36 St., plans by Trautwein & Howard, 1411 Walnut St., men's dormitory, $1,557,000. CD 8/24.

▲ **Pa., Pittsburgh**—SHOPPING CENTER—Penn Hills Center, Inc., Churchill Valley, Pittsburgh, plans by Richard B. Benn, 209 Beatty Bldg., 1 story brick, block, steel, shopping center, 10 stores, Penn Twp. $2,000,000.

R. I., Pawtucket—CHURCH—Church of the Sacred Heart, Rev. Robert Cassidy, pastor, 38 Park St., plans by William M. O'Rourke, 10 Child St., Warren, church, $300,000.

Tex., Dallas—PERSONNEL CENTER—General Motors Corp., Arlington, dealer training personnel center, $750,000.

▲ **Tex., Dallas**—OFFICE—Insurance Co. of Texas, 6336 Richmond St., plans by Mackie & Kamrath, 2713 Ferndale St., Houston, 5 story, bsmnt. office, contemporary design throughout, rein.-con. frame and fdn., lightweight aggregate masonry exterior walls, air-conditioning, acoustics, etc., Central Freeway, $1,000,000. Walter P. Moore, 2 Pinedale St., Houston and Raymond L. Jenkins, 4316 Blossom St., Houston, consult. engrs. CD 11/11.

▲ **Tex., Dallas**—DWELLINGS—Mayflower Investment Co., & Carr P. Collins, 912 Commerce St., 30 frame dwellings, concrete slab fdn. $425,000; 20 Knotty pine interior, masonry dwellings, concrete slab fdn. air-conditioning, $350,000; 24 dwellings, concrete slab fdn., air conditioning, $375,000; 18 masonry dwellings, concrete slab fdn., $300,000, in area of Plymouth Park Community.

▲ **Tex., Houston** — DWELLINGS — Beacon Development Corp., c/o C. Edw. Little, 2422 Southgate St., 22 dwellings, $332,000; 25 dwellings, $340,000; 16 masonry dwellings, $310,000; 27 dwellings, $355,000, off Post Oak Rd. at Richmond, 45-acre tract.

▲ **Tex., Houston**—DWELLINGS—Beacon Realty Development Corp., c/o C. Edw. Little, 2422 Southgate St., 18 masonry dwellings, concrete slab. fdn. $350,000; 21 brick and redwood dwellings, concrete slab fdn., air-conditioning, $365,000; 25 brick dwellings, concrete floor slab air-conditioning. $390,000, Post Oak Rd. at Richmond Ave. areas.

▲ **Tex., Pasadena** — DWELLINGS — Berkshire Village Corp., c/o T. E. Brasell, 702 Mulberry Lane, plans by Edw. Bodet, 3230 Louisiana St., Houston, Unit 1, 30 dwellings, $300,000; Unit 2, 34 dwellings, $340,000; Unit 3, 27 dwellings, $320,000; Unit 4, 38 dwellings, $372,000 all in Berkshire Village area; 24 homes, $300,000; 31 dwellings, $365,000 in Pasadena area.

▲ **Va., Alexandria**—HOTEL-MOTEL—M. Seth Horne, 6308 Wilston Dr., Falls Church, plans by Corning & Moore, 1726 "M" St., N.W. Wash., D. C., and Ned A. Cole, 4601 E. 5 St., Austin, Tex., const. combination hotel-motel to be part of Holiday Inns of America, Inc., Shirley Hy. and Leesburg Pike, Rte. 7. $3,000,000.

▲ **Va., Fairfax**—HOTEL-MOTEL—M. Seth Horne, 6308 Wilston Dr., Falls Church, plans by Corning & Moore, 1726 "M" St. N.W. Wash., D. C., and Ned A. Cole, 4601 E. 5 St., Austin, Tex. const. combination hotel-motel to be part of Holiday Inns of America, Inc., Rte. 50, Arlington Blvd. at 1 Patrick Henry Dr. $3,000,000.

Va., Norfolk—RESIDENCES—Pierce & Love, 1645 Bayview Blvd., 50 one story brick veneer residences, $850,000. M. R. Pierce, c/o owner, engr.

▲ **Man., Winnipeg**—SHOPPING CENTER, etc.—Arle Realty Co. A & L Bldg., shopping and business center incl. offices, shops, hotel and medical center, Wilton and Nathaniel Sts., $10,000,000.

Que., Longueuil—COTTAGES—B. and Harry Schoel, c/o Quebec Iron Works Regd., 1665 Dansereau St., Montreal, 100 concrete brick, stone cottages in Fatima Parish. $750,000.

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INDUSTRIAL BUILDINGS

▲ **Ill., Woodstock**—LABORATORY—**Morton Salt Co.,** 120 S. LaSalle St., Chicago, plans by Elmer C. Carlson 2141 W. 95 St., Chicago, Ill., research laboratory, $750,000. CD 8/17.

Ind., Indianapolis—INDUSTRIAL—Hugh Baker & Assocs., 602 W. McCarty St., 3 industrial buildings, $350,000 or more.

▲ **Ind., Mishawaka**—PLANT—Bendix Aviation Products Div., Bendix Dr. and R.R. South, South Bend, Zone 20, plant $2,000,000.

▲ **Ky., Louisville**—BUILDINGS, etc.—Hirsch Bros., 1400 Cedar St., plans by Joseph & Joseph, Speed Bldg., buildings and facilities to increase food production, $1,000,000. E. R. Ronald & Assoc., 554 S. Third St., consult. engrs.

▲ **Ky., Louisville**—FACTORY—Marley Co., 600 Bergman St., plans by Joseph & Joseph, Speed Bldg., addnl. factory facilities, $1,000,000. E. R. Ronald & Assoc., 554 S. Third St., consult. engrs.

Mich., Detroit—ENGINEERING and OFFICES—Continental Aviation & Engineering Corp., 1470 Algonquin St., Detroit, plans by Robert L. Svoboda, 14827 E. Jefferson St., 2 buildings, one 2 story, 30,000 sq. ft. engineering and executive offices, and other steel, mfg. and research bldg., Approx. $750,000.

▲ **Pa., Havertown**—SUB STATION—Phila. Electric Co., 900 Sansom St., Phila., sub-station, W. Eagle Rd. $750,000; sub-station, Oakmont, $250,000. Leland B. Dyke, c/o owner, engr. CD 7/14.

Tex., Cleburn—FACTORY—Seventh Day Adventist Church, Keene, furniture-mfg. factory, near Keene. $500,000.

▲ **Tex., El Paso**—REFINERY—The Texas Company, E. Paisano Dr., doubling capacity existing 5500-bbl. crude refinery, $2,750,000; 834,000 bbl. capacity tank farm expansion for crude and refined gasoline, $300,000.

▲ **Tex., Freeport**—PLANT—Dow Chemical Co., Freeport glycerine production plant, $5,000,000.

▲ **Tex., Gainesville** — PLANT — National Supply Co., Gainesville, 100,000 sq. ft. main plant and all allied bldgs. and facilities for mfg. oil field machinery. $3,500,000. Giffels & Valet, Inc., 1000 Marquette Bldg., Detroit, Mich., consult. engr. and archt. CD 6/22.

Tex., Garland — HEADQUARTERS — Foxboro Co., Garland, industrial division headquarters bldg., on Northwest Hy. at Yeager St., near Garland Airport, near here. $300,000.

Tex., Mesquite—WAREHOUSE, etc.—Texas Power & Light Co., Interurban Bldg., Dallas, regional warehouse and supply center 5-acre track in Mesquite Industrial District Zone, $450,000.

Tex., Plano—PLANT—Texas Wire & Cable Co., c/o Wm. Kearney, 5645 Stonegate Rd., Dallas, plant, 24-acre site off Ross Ave. $475,000.

▲ **Tex., Rockwall**—PLANT—Texas Aluminum Co., Rockwall Unit No. 2, extrusion plant addn., $375,000, for 1953; Unit No. 3, plant addn., $350,000 for 1954; Units 4, 5 and 6, $750,000, for out into 1954.

UNCLASSIFIED

Texas — RURAL DISTRIBUTION LINES — Cherokee County REA Co-operative, Jacksonville, 200 mi. new service lines and sys. imprvs., Cherokee Co. $305,000.

Tex., Eddy—TV STATION—Bell Publishing Co., Station KCEN-TV, Temple, plans by Lee Bettrill, Temple, TV station, 833 ft. on tower and antenna, Channel 6 VHF. $275,000. W. G. Edgerton, 135 El Monte St., San Antonio, consult. engr.

Tex., Houston — TELEVISION STATION — Texas Radio Corp., 4000 Main St., television station, $250,000.

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CAPSTAN TYPE, DRUM TYPE AND SPECIAL TYPES

Model SC Superior Capstan Carpuller

Model EP Drum Type Carpuller

Today's requirements of mechanization dictate the use of Carpullers for moving cars of all types. We specialize in the design and manufacture of these units. Our long experience equips us to build Carpullers to suit various arrangements or requirements.

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Are YOU trying to push water through LINES LIKE THIS?

No need to worry about it anymore!

You can recondition your old cast iron or steel line very economically...at much less than the cost of a new pipe line.

AND...*without appreciably disturbing present service!*

Interior tuberculation and incrustation is removed by patented processes used by PIPE LININGS, INC....and a new, continuous, smooth surface cement mortar lining is applied...with only momentary interruption to install by-pass lines.

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CEMENT MORTAR LINING WILL...

Protect against discoloration and contamination
Protect against corrosion
Improve flow coefficients
Prevent leakage
Reduce maintenance costs
Reduce pumping costs

After reconditioning

TATE PROCESS USED
on Line 4" to 16"
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Used on Line 16" to 144"
Consult our hydraulic engineers ...they are at your service.

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Please send complete information on how we can obtain new pipe line performance from our old line

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HOW TO HANDLE
WET JOBS

#21 of a Series

EARTH EMBANKMENT
FOR RAILROAD
Matawan, N. J.

Contractor: J. Rich Steers, Inc.

WELLPOINTS SPEED
CONSOLIDATION OF MARSH

THE ABOVE trestle, spanning Matawan Creek and adjoining marshes, was being replaced by an earth embankment (creek carried through by culvert). While placing the fill, the following problem arose:

• The underlying marsh soil—predominantly silt—was highly unstable, and progress in raising the fill went at snail's pace. Any attempt to hasten the surcharge meant threat of shear failures, thus imperilling trestle.

• Certainly no simple problem, yet it was quickly and dependably solved with a Griffin Wellpoint system (See photo, center). Used together with vertical drains, the wellpoints, penetrating to a depth of about 50 ft, greatly accelerated consolidation of the soft soil.

• When *you* meet with an out-of-the-ordinary wet job, it will pay you to meet with Griffin engineers.

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881 East 141st Street, New York 54, N. Y.
Hammond, Ind. Houston, Tex. Jacksonville, Fla.

In Canada: Construction Equipment Co., Ltd.
Toronto Montreal Halifax

UNIT PRICES

Airport paving, New York

A $2,991,411 contract for airport paving has been awarded by the U. S. Army Engineers to the combination of N. R. Corbisello, Inc. & Triple Cities Const. Co., Binghamton, New York. The work will be done on Air National Guard facilities at Schenectady County Airport, Schenectady, New York.

Corbisello & Triple Cities underbid the second low bidder by 3%, the high bidder by 5%, and the engineer's estimate by 6% in a five bid competition in which all bids fell below the engineer's estimate.

Seven thousand feet of concrete runway and taxiway will be graded, drained and paved on this project which started August 20 and will take 300 calendar days.

Skilled workers will receive $3.00 per hr; semi-skilled workers, $2.50 per hr; and common laborers, $2.00 per hr. Bidders include:

1C	N. R. Corbisello, Inc. & Triple Cities Const. Co., Binghamton, New York	$2,991,41★
2	White Oak Excavators, Inc., Plainville, Connecticut	3,096,791★
5	Berlant Const. Co., Harrison, New York.	3,146,407★
EE	U. S. Army Engineers, New York, New York	3,197,581★

Bids. 6-23-53 Item	Unit	Quantity	Unit Prices 1C	2
Flexible pavement—schedule "A"				
Select mat subbase crse, flexible & rigid	cy	112,000	$4.00	$1.44
Dry bound macadam base course	cy	31,000	9.00	8.80
Bit prime coat	gal	83,500	0.20	0.20
Bit binder & surf crse (central plant hot mix)	t	31,000	10.00	7.75
Bit material	t	1,860	35.00	34.00
Bit tack coat	gal	37,200	0.20	0.25
Conc pavement	cy	4,600	20.00	20.00
Rigid pavement—schedule "B"				
Conc pavement	cy	44,200	20.00	19.00
Select mat subbase crse, flexible & rigid	cy	97,700	4.00	1.50
Dry bound macadam base course	cy	700	9.00	11.00
Bit prime coat	gal	2,100	0.20	0.25
Bit binder & surf crse (central plant hot mix)	t	1,400	10.00	10.00
Bit material	t	84	35.00	40.00
Bit tack coat	gal	1,680	0.20	0.35
Schedule "C"				
Clearing	ac	75	400.00	375.00
Clearing & grubbing	ac	12	1,000	500.00
Uncl excavation	cy	1,190,000	0.90	1.25
Reinf conc culv pipe, 12"	lf	1,270	10.00	9.00
15"	lf	3,730	12.00	12.25
18"	lf	550	15.00	14.50
24"	lf	1,540	17.00	20.00
30"	lf	3,400	25.00	27.00
42"	lf	720	30.00	37.50
6" pipe subdrains	lf	1,340	2.50	8.50
Headwalls	cy	15	100.00	100.00
Inlet, type A	ea	13	1,000	300.00
type B	ea	2	1,200	350.00
type C	ea	3	1,500	350.00
Manholes, type A	ea	10	1,000	400.00
Extra depth of manhole	lf	25	100.00	25.00
Subdrain manhole, type D	ea	3	500.00	350.00
Backfill replacing unstable material	cy	100	5.00	5.00
Top soil	cy	38,000	2.00	2.00
Seeding, type A	ac	150	100.00	150.00
type B	ac	20	125.00	140.00
Fertilizer, super-phosphate	t	61	100.00	90.00
Fertilizer, 10-6-4	t	100	100.00	100.00
Lime	t	255	25.00	18.00
Mulching	ac	20	150.00	220.00

Bids:6-23-53 Item	Unit	Quantity	Unit Prices 1C	2
Mowing	ac	340	10.00	25.00
Refertilizing	ac	34	100.00	40.00
Reseeding	ac	34	75.00	150.00
Repairs	ac	5	100.00	100.00
Add to transformer valut	ls	1	10,000	7,500
Underground elec ducts				
4-way	lf	4,080	10.00	11.00
6-way	lf	400	15.00	18.00
8-way	lf	230	20.00	20.00
Handholes	ea	52	500.00	250.00
Pull chambers	ea	2	500.00	500.00
Single cable trench	lf	18,700	1.00	0.75
Multiple cable trench	lf	9,100	1.00	1.00
Install cable in trench	lf	81,000	0.40	0.09
Install cable in duct	lf	8,250	0.40	0.50
Install high intensity lights	ea	83	100.00	100.00
Install taxiway lights	ea	155	100.00	100.00
Rem, clean & store medium intensity lights	ea	47	50.00	10.00
Install transformer vault equip & control panel	ls	1	5,000	5,000
Disassemble, mark & store water tank within 1-mi area on site & prepare assembly diagram	ls	1	25,000	25,000
Runway & taxiway marking	ls	1	5,000	15,000

Grading, draining & surfacing, Michigan

An average of 7% separated each of the four bids on a $33,381 highway project awarded by the Michigan State Highway Dept. to Ivan W. Schworm, low bidder. Schworm underbid Vinton Const. Co., second low bidder, by 3% and Gould & Cross, high bidder, by 19%. J. J. Becker is the district engineer.

The job consists of grading, installing drainage structures, and surfacing 2.4 miles of highway in Grand Traverse county. The grading and draining include clearly, grubbing, culvert construction and earth excavation. A 5-in. composition gravel surface, 21-ft wide, comprises the aggregate surface course.

Minimum wage rates on the 4-months project are: skilled labor, $0.95 per hr; intermediate labor, $0.85 per hr; and unskilled labor, $0.75 per hr.

Bidders include:

1C	Ivan W. Schworm, Traverse City, Mich	$33,381
2	Vinton Const. Co., Coldwater, Mich	34,260
4	Gould & Cross Grand Rapids, Mich	41,422

Bids. 7-29-53 Item	Unit	Quantity	Unit Prices 1C	2
Clearing	ac	5 9	$200.00	$200.00
Grubbing	srd	944	2.00	2.00
Remove trees, 8"-12" dia	ea	42	20.00	20.00
13"-24" dia	ea	47	40.00	30.00
25"-36" dia	ea	15	75.00	80.00
37" & over dia	ea	2	100.00	100.00
Class A culvert, 12"	lf	624	2.25	2.00
18"	lf	96	3.25	3.50
Class B culvert, 15"	lf	48	3.25	3.50
18"	lf	106	4.00	4.50
42" corr met pipe	lf	24	11.00	11.00
E arth excavation	cy	39,353	0.30	0.30
Overhaul	cymi	1,885	0.20	0.16
Grade A concrete	cy	2 5	60.00	70.00
Reinforcing steel	lb	125	0.15	0.20
Agg surf course 4.01 (L.M.)	cy	4,935	1.40	1.60
Agg approach (L.M.)	cy	310	1.50	1.90
6" open joint sewer	lf	1,785	1.10	1.10
Porous backfill, grade B	cy	1,339	1.00	1.00
Obliterating old road	ac	0 85	100.00	100.00
Guard posts	ea	53	4.00	4.00
Stabilizing material	cy	685	0.50	0.90
Project markers	ea	2	20.00	20.00

Now! A new "break" for the driver

. . . is a "break" for your delivery costs! The world's most comfortable truck cab cuts driver fatigue!

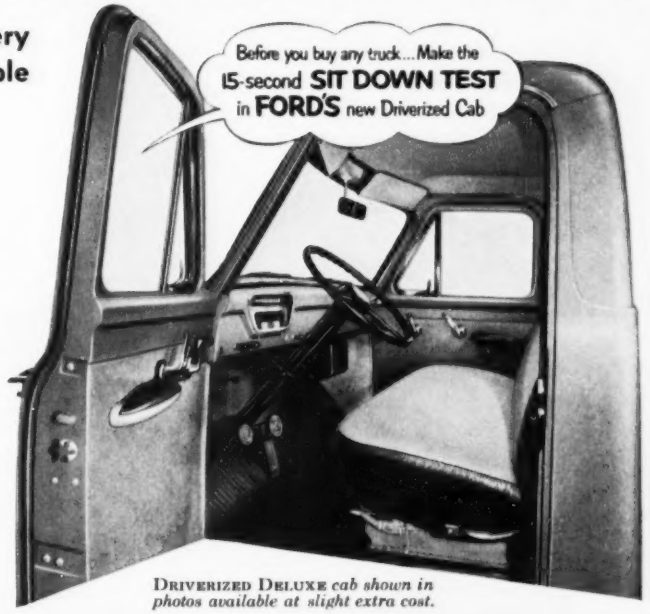
Keeping the driver happy by reducing driver fatigue is not the only virtue of the new Ford Truck DRIVERIZED CAB.

Easier driving, for example, means safer driving! Easier driving means greater efficiency in terms of more trips, more stops, more deliveries per day—which means a more profitable operation.

The new Ford Truck DRIVERIZED CAB is just one of many new *time-saving* features that help *get jobs done fast!*

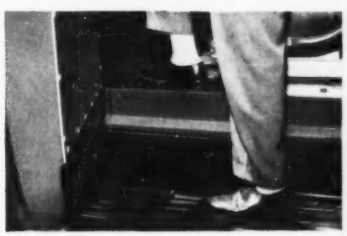
For sustained speed travel, Ford provides new LOW-FRICTION power in V-8 or Six. For faster, easier handling, Ford provides Synchro-Silent transmissions in every model—and new "short-turn" front axles.

Both Standard and Deluxe DRIVERIZED CABS offer all the features mentioned on this page. See your Ford Dealer for full details.



DRIVERIZED DELUXE *cab shown in photos available at slight extra cost.*

SWING *open the new, wider doors!* Door handles are the easy-operating push-button type . . . like you get in quality cars. Door latches are new rotor-type.



HOIST *your size 12's into the cab!* Plenty of room between the seat and door pillar. No need to do a toe dance getting into or out of a Ford "DRIVERIZED CAB!"

SLIDE *into the wide, comfortable seat.* Bounce on it to test the super-cushioning action of Ford's exclusive *seat shock snubber* and new non-sag springs.

SWEEP *your eyes across the new one-piece windshield.* With picture-window visibility like this you can really navigate. Safer driving, of course! Less eye-strain!

GLANCE *back through the 4-ft. wide rear window.* Heads right or left, you can see the space you're backing into. Why pay extra for rear quarter windows?

STRETCH *your arms into big cab roominess.* With more hip-room than any of the 5 other leading makes, FORD DRIVERIZED CABS banish that "squeezed-in" feeling.

New F-900 BIG JOB has a 27,000-lb. G.V.W. rating for extra heavy hauling work. LOW-FRICTION 155-h.p. Cargo King V-8 offers high sustained torque to give more performance flexibility for your heaviest loads.

FORD
ECONOMY
TRUCKS

SAVE TIME! SAVE MONEY!
LAST LONGER!

Tests Prove

CLAY PIPE IS *Completely unaffected* BY ACIDS

Laboratory tests *prove* Vitrified Clay Pipe is the *only* sewer pipe that's completely unaffected by sewer acids, corrosive gases, chemical and industrial wastes. These tests confirm what generations of contractors and engineers have learned through experience with Clay Pipe in actual service. In many instances sections of Clay Pipe, constantly exposed to corrosive chemicals for decades, have been dug up and found to be good as new!

Vitrified Clay Pipe is *chemically inert.* Acids can't corrode it. Strong detergents can't make it soft or spongy. Time can't weaken it. Regardless of the wastes that may flow through it, Clay Pipe is sure to last. Why take chances on substitute materials? Clay Pipe is always readily available. It's *guaranteed for 50 years!* And it never wears out!

NATIONAL CLAY PIPE MANUFACTURERS, INC.

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ESSENTIAL • ECONOMICAL • EVERLASTING

Vitrified
CLAY
CLAY PIPE NEVER WEARS OUT!
PIPE

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 22 Massachusetts
STREETS AND ROADS
September 22 Massachusetts

▲† **Mass., Bedford**—DORMITORIES—B.A. On Or About 10/22—U. S. Eng., 857 Commonwealth Ave., Boston, Zone 15, two 198-man airmen's dormitories and one 500-man mess and admin. bldg., Laurence G. Hanscom Air Force Base, ENG-19-016-54-34, Approx. $1,000,000. Plans deposit $50.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

NEW HAMPSHIRE—State Dpt. P. Wks. and Hys., Concord,

Landers & Griffin, Inc., 800 Islington St., Portsmouth, N. H. LB **$543,470,** est. $300,000, one 480 ft. concrete deck on Is and 540 ft. concrete deck on Js, both on steel bearing piles, Portsmouth. Bids Sept. 3. CD 8/28.

Pacella Bros. Inc., 63 Olney St., Dorchester, Mass. CA **$533,120,** est. $500,000. Sect. 3 intercepting sewer, pump station, appurtenances, Brightman to Alton Sts., FALL RIVER, MASS. City, Sewer Dpt., City Hall, Fall River, Mass. Hayden, Harding & Buchanan, 810 Park Square Bldg., Boston, Mass., engrs. Awarded Aug. 27.

BUILDINGS

LOW BIDS AND CONTRACTS

Gordon & Sutton, 227 Houghton St., **North Adams, Mass.** LB **$370,000,** est. $350,000. Hawlemont Regional Elementary SCHOOL adjacent to high school, CHARLEMONT, MASS. Towns of Charlemont and Hawley, W. P. Stafford, chn. Regional School Bldg. Comn., Charlemont, Mass. Bids Sept. 2. CD 8/25.

Vara Constr., Inc., 718 Huntington Ave., Boston, Mass. CA **$809,000.** elementary SCHOOL, Chelmsford Center, CHELMSFORD, MASS. Town School Dpt., 50 Billerica St., Chelmsford, Mass. Bids Aug. 4, awarded Aug. 28. CD 8/11.

John Capobianco, 44 School St., Boston, Mass. CA **$535,000.** BANK, Essex and Lawrence Sts., LAWRENCE, MASS. Essex Savings Bank, Lawrence, Mass. CD 8/10, under LB.

Scabia Co., 86 Shawmut Ave., Boston, Mass. LB **$300,000.** Capt. William G. Shoemaker Elementary SCHOOL addn., Regina Rd., LYNN, MASS. City, School Bldg. Dpt., City Hall, Lynn, Mass. Bids Sept. 2. CD 8/10.

C. C. Temple, 729 Boylston St., Boston, Mass. LB **$449,100.** HOSPITAL addn., alterations and BOILER ROOM, NEWBURYPORT, MASS. Anna Jacques Hospital, Highland Ave., Newburyport, Mass. Bids Sept. 3. CD 8/14.

Lars Hogbloom, Weatogue, Conn., LB, **$506,990,** elementary SCHOOL, Nimrod Rd., SIMSBURY, CONN. Town School Bldg. Comn., Town Hall, Simsbury, Conn. Bids Sept. 1. CD 8/18.

▲ **Gilbane Bldg. Co.,** 90 Calverly St., Providence, R. I., LB, **$1,179,000,** Proj. B/A-E-170, men's DORMITORIES University of Connecticut, STORRS, CONN. State P. Wks. Comrs., State Office Bldg., Hartford, Conn. Bids Sept. 2. CD 8/6.

Waterbury Constr. Co., Inc., 225 S. Leonard St., Waterbury, Conn., LB, **$597,000,** Wilson SCHOOL addn., alterations, WATERBURY, CONN. City, Dr. J. J. Gilmartin, supt. Schools, Crosby High School, Waterbury, Conn. Bids Sevt. 2. CD 8/17.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 29 New Jersey — October 1 New York
STREETS AND ROADS
September 22 Maryland — October 1 New York

BIDS ASKED—BUILDINGS

▲ **N. Y., New York**—HOUSING—B.A. 9/30—New York City Housing Auth., 63 Park Row, Zone 38, foundations and general constr., heating and ventilating, electrical work, plumbing, furnishing, installing elevators for LaGuardia Houses Proj. No. NY-5-21, Sect. 1, incl. Bldgs. 4, 5, 7 and 9, in areas in Manhattan Boro, in block bounded by Montgomery, Monroe, Clinton and Madison Sts., Bldg. 5 in easterly half of block bounded by Madison, Clinton, Monroe and Jefferson Sts. and Bldg. 4 in easterly half of block bounded by Monroe, Clinton, Cherry and Jefferson Sts. Plans deposit $75, $25 elevators. CD 10/18/50.

Pa., Warren—BOILER PLANT—B.A. 9/30—General State Auth., 18 and Herr Sts., Harrisburg, general constr. and mechanical work boiler plant addn., Warren State Hospital. $800,000. Plans deposit $10 each. Swindell-Dressler Corp., P. O. Box 1888, Pittsburgh, Zone 30, engrs.

D. C., Wash.—SERVICE—Bids Asked—Lansburgh Department Store, 7, 8 and E Sts. N.W., Wash., D. C., 7 story service building adjacent to main store. $600,000. Abbott Merkt & Co., 10 E. 40 St., New York, N. Y., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

Fitzgerald Bros. Constr. Co., Inc., 92 Fourth St., Troy, N. Y., LB **$115,222,** est. $144,000, Petersburg Junction-Hoosick Co. Rd. 1.73 mi. FASS. 53-10, Rensselaer Co.;

Lizza & Sons, Inc., 21 Orchard St., Oyster Bay, N. Y. LB **$927,483,** est. $1,120,000. Hauppauge-Nesconset Co. Rd. 85, 4.69 mi. FASS-53-12, Suffolk Co.; LB **$336,570,** est. $462,000, North Hempstead Turnpike, S. H. 9018, Middle Neck Rd., S. H. 9019, Old Middle Neck Rd., Co. Rd. 251, 1.48 mi. FARC. 53-110, SS. 53-13, Nassau Co.;

J. J. Haggerty, Inc., Rogers Ave., Westhampton Beach, N. Y., LB **$227,767,** est. $233,000, Sag Harbor Village, S. H. 1206, 1.41 mi. FARC. 53-111, Suffolk Co.;

Hornell Constr. Corp., Hornell, N. Y., LB **$488,013,** est. $604,000, Knights Creek-Scio Co. Rd. 9, Scio-Vandermark Creek Co. Rd. 10, 1.1 mi. FASS. 53-11, Alleghany Co.;

Torrington Constr. Co., Inc., Torrington, Conn., LB **$1,845,371,** est. $1,854,000, Speculator-Indian Lake, Pt. 1, 10.66 mi. FAS. SH. 53-11, Hamilton Co.; cancelled bids to have been opened Sept. 3, New York State Thruway Mohawk Sect.-Sub. 10B (East Schuyler-Fort Herkimer) 0.22 mi. M. T. 53-13. Herkimer Co., est. $2,338,000. CD 8/13.

MacAsphalt Constr. Co., 33-15 Lawrence St., Flushing, N. Y., LB **$88,690,** Contr. GWB 120.22 permanent street restoration, W. 179 St. Tunnel at George Washington Bridge, NEW YORK, N. Y. Port of New York Auth., 111 8th Ave., New York 11, N. Y. Bids Sept. 3. CD 8/28.

▲ **NEW JERSEY**—State Hy. Dpt., 1035 Parkway Ave., Trenton, Zone 1,

P. T. Cox Constr. Co. Inc., 271 Church St., New York, N. Y., LB, **$1,012,859,** bridges, walls and grading 0.32 mi. Route 21 from Herbert Place to Riverside Ave., Section 4D Newark, Essex Co. Bids Sept. 8. CD 8/20.

NEW JERSEY—New Jersey Hy. Auth., State Hy. Dpt. Office Bldg., 1035 Parkway Ave, Trenton, Zone 1,

S. J. Groves & Sons Co., P. O. Box 85, Woodbridge, N. J., CA, **$946,979,** grading, paving, drainage and structures 0.8 mi. section of Garden State Parkway, from Route 4 Parkway to Route 9, Dover Twp., Ocean Co. Bids Aug. 10, awarded Sept. 4. CD 8/13, under LB.

NEW JERSEY—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton, Zone 1,

Francis A. Canuso & Sons, 173 W. Rooseveit Blvd., Phila., Pa., LB, **$935,014,** paving 2.502 mi. U. S. Route 130 from Repaupo Rd. to Raccoon Creek (Sections 16B and 8A) Logan Twp., Gloucester Co. Bids Sept. 1, CD 8/13.

▲ **NEW JERSEY**—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton, Zone 1,

Francis A. Canuso & Sons, 173 W. Roosevelt Blvd., Phila., Pa., CA, **$1,674,403,** paving 3.895 mi. U. S. Route 130 from Woodbury Creek to Berkley Rd, (Sections 9C, 11B 14B and 15C), Paulsboro, Gloucester Co. Bids Aug. 11, awarded Sept. 8. CD 8/13, under LB.

NEW JERSEY—State Hy. Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton, Zone 1,

Geo. M. Brewster & Son, Inc., 275 W. Fort Lee Rd., Bogota, N. J., CA, **$494,130,** paving 1.78 mi. Palisades Interstate Parkway from Station 319-0 to Station 413-0 Section 1 G, Alpine Borough, Bergen Co.;

Franklin Contg. Co., 12 Central Ave., Newark, N. J., CA, **$261,631,** Section 23, Route 24 0.892 mi. between Stewartsville Heights and New Village, Warren Co. Bids Sept. 8. CD 8/20.

D. Palombo Sons, Inc., 1600 Washington Rd., Pittsburgh, Pa., LB **$209,682.** est. $200,000, sanitary sewers Lowries Run and Gaso Rd.;

Hinkel Mining Constr. Co., 1024 Haller St., Pittsburgh, Pa., LB **$65,000,** sanitary sewers, Jacks Run, Kaeting Dist., Ross Twp., PITTSBURGH, PA. Comrs. Ross Twp., Municipal Bldg., Perry Hy. Pittsburgh, Pa. McCully Eng. Co., 3500 Simon Ave., Pittsburgh, Pa. engr.

† **MARYLAND**—Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington, Va.

Williams Paving Co. 1269 E. Princess Anne Rd., Norfolk, Va. LB **$875,236.** c. conc. ⅓ mi. north of Good Luck Rd. to Laurel-Bowie Rd., Baltimore-Washington Parkway, Proj. 1D5-E5-F6, Prince Georges Co. Bids Sept. 3. CD 8/3.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Topper Constr. Co.,** c/o A. H. Salkowitz, archt., 37-60 82 St., Jackson Heights, N. Y. Owner Builds. **$1,500,000.** 75 HOUSES, tract at Wetherill and Mulberry Rds., GARDEN CITY, N. Y.

▲ **Tanglewood Homes, Inc.,** c/o Henry Moger, Jr., archt., 250 Main St., White Plains, N. Y. Owner Builds. **$1,600,000.** 85 HOUSES, in Fort Hill Sect., GREENBURGH, N. Y.

Northridge-at-Kings Point Homes, c/o Matern & York, archts., 90-04 161 St., Jamaica, N. Y. Owner Builds. **$780,000.** 20 HOUSES, 22-acre tract, Kings Point Rd., KINGS POINT, N. Y.

Village Gardens Homes, c/o George G. Foster, archt., 5 Liberty St., Hempstead, N. Y. Owner Builds. **$700,000.** 60 HOUSES, 15-ACRE TRACT, Wellwood Ave., near Montauk Hy., LINDENHURST, N. Y.

Ellis Chingos Constr. Corp., 830 Willis Ave., Albertson, N. Y., LB **$318,939,** general constr. grade SCHOOL, Meadow Dr., MINEOLA, N. Y. Bd. Educ., Union Free School Dist. 10, Emory Rd., Mineola, N. Y. Bids Aug. 6. CD 7/16.

McClosky Co., Liberty and Denny Sts., Pittsburgh, Pa. CA **$300,000.** design and construct, 1 and 2 story, bsmnt., L-shaped, steel frame, brick, block, stone CHURCH and PAROCHIAL SCHOOL, Kennedy Twp., CORAOPOLIS, PA., St. Malachys R. C. Congregation, Forest Grove Rd., Coraopolis, Pa.

▲ **Mt. Pleasant Manor Homes,** c/o Alwin Cassens, Jr., archt., 145 So. Franklin Ave., Valley Stream, N. Y. Owner Builds. **$1,375,000,** 125 HOUSES, 45-acre tract Mt. Pleasant Rd., 1 mi. south of Jericho Turnpike, SMITHTOWN, N. Y.

▲ **Wigton-Abbott Corp.,** 1225 South St., Plainfield, N. J. CA, **$500,000.** design and construct, 1 story color film processing PLANT, 16-31 Route 208, FAIRLAWN, N. J. Eastman Kodak Corp., 343 State St., Rochester, N. Y.

▲ **Murray Shopping Center, Inc.,** c/o Union Real Estate Co., Standard Life Bldg., Pittsburgh, Pa., Owner Builds. **$2,000,000.** 1 story brick, block, steel frame SHOPPING CENTER, GREENSBURG, PA. Chas. Roberts, 5991 Center Ave., Pittsburgh, Pa., archt.

Navarro Corp., 6219 Broad St., Pittsburgh, Pa., CA **$800,000.** 2 story, 75x146 ft., bsmnt., brick, block, steel, CHURCH and 53x25x71x33 SEMINARY, HERMAN, PA. St. Mary's R. C. Church and St. Fidelis Seminary, Herman, Pa. Bids July 3. CD 7/1.

Uniontown Constr. Co., 144 E. Main St., Uniontown, Pa. LB **$459,000.** general constr. OFFICE and MAINTENANCE BLDG. for State Hy. Dpt. Dist., UNIONTOWN, PA. Dpt. Property & Supplies, 319 N. Front St., Harrisburg, Pa. Architectural Unit, Hys. Dpt., Harrisburg, Pa., engr.-archt.

Consolidated Engineering Co., 20 E. Franklin St., Baltimore, Md. CA **$100,000.** 1 story, 100x120 ft., steel, masonry WAREHOUSE, BALTIMORE, MD. Maryland Glass Corp., 2147 Wicomico St., Baltimore, Md.

Mullan Contg. Co., 3945 Greenmount Ave., Baltimore, Md. LB **$859,000.** concrete, steel, masonry GYMNASIUM and AUDITORIUM, masonry COTTAGES Nos. 8 and 10, masonry SERVICE BLDG., Maryland Training School for Boys, LOCH RAVEN, MD. State, Dpt. P. Imprvts., 506 Park Ave., Baltimore 1, Md. Bids Sept. 3. CD 9/27.

Michnick & Dimaio, 1520 K St. N.W., Wash., D. C. CA **$800,000.** one hundred eighteen 18x32 ft., brick semi-detached HOMES, Dupont Village, near SILVER SPRING, MD. Wyngate Homes, Inc., c/o builder. Philip Mason, 8511 Colesville Rd., Silver Springs, Md., archt.

Dominion Contractors, Inc., 10 W. 23 St., Baltimore, Md. CA **$764,400.** Campfield Elementary SCHOOL, Pikesville, TOWSON, MD. Baltimore Co. Bd. Educ., Aigburth Rd., Towson, Md. CD 8/26, under LB.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
September 24 Virginia

† **Va., Yorktown**—PILE and FENDER SYSTEM—B.A. 9/29—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, pile and fender sys. for pier and repairs to finger piers at U. S. Naval Schools (Mine Warfare), NOY 80164, Spec. 40490. Plans deposit $10.

BIDS ASKED—BUILDINGS

▲ **Va., Arlington**—HIGH SCHOOL—B.A. 9/24—Bd. Educ., Arlington Co., 1426 N. Quincy St., Williamsburg Junior High School. $1,500,000. Plans deposit $50. Extended date. Rhees Burket, 1223 Conn. Ave. N.W., Wash., D. C., archt. CD 8/27.

Ky., Louisville—SCHOOL—B.A. 9/25—Jefferson Co., Bd. Educ., 618 W. Jefferson St., county school at Browns Lane and Shelbyville Rd. $700,000. Plans deposit $25. Hartstein, Louis & Henry, McDowell Bldg., archts. E. R. Ronald & Assoc., 554 S. Third St., engrs. CD 11/10.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

WEST VIRGINIA—State Road Comn., Charleston,

Feather Constr. Co., P.O. Box 881, Morgantown, W. Va., LB **$65,873.** b. conc. 3.126 mi. U.S. 50 Barbour Co. Line Rd. Fed. Aid Sec. Proj. S-639, Preston Co. Bids Sept. 1. CD 8/26.

† **R. P. Farnsworth Constr. Co.,** 1515 S. Saicedo St., New Orleans, La., LB **$988,000.** submarine battery overhaul shop, Charleston Naval Shipyard, NOY 75260, CHARLESTON, S. C. P. Wks. Officer, Bldg. No. 12, U. S. Naval Base, Charleston, S. C. Bids Sept. 3. CD 8/21.

LOUISIANA—State Hy Dpt., Highway Office Bldg., Baton Rouge,

W. R. Aldrich & Co., 2593 Baywood Ave., Baton Rouge, La. CA **$548,998.** 22 ft. c. conc. 5.756 mi. Jennings-Evangeline Hy. S.R. No. 371, S.P. 201-01-05 and 201-01-04 FASP No. S 182, Jefferson Davis and Acadia Parishes. Bids Aug. 19, awarded Sept. 2. CD 8/27, under LB.

Hart & Hart, Providence, Ky. LB **$104,000.** dredging, Beargrass Creek, resurf. piers on bridge, rip rap stone walls on curves, LOUISVILLE, KY. Metropolitan Sewer Dist., 414 W. Jefferson St., Louisville, Ky. Bids July 27. CD 4/22/48.

BUILDINGS

LOW BIDS AND BUILDINGS

Culpeper Building & Supply Corp., Culpeper, Va., LB $336,847. boy's DORMITORY, LYNCHBURG, VA. State Hospital Bd. Comm. of Va., Lynchburg State Colony, Lynchburg, Va. Bids Aug. 31. CD 8/6.

Frank H. Conner, P. O. Box 4001, Brambleton Station, Norfolk, Va., CA $709,900, Little Creek and Shelton Park Elementary SCHOOLS, near Norfolk, PRINCESS ANNE, VA. Princess Anne Co. School Bd., Princess Anne, Va. Bids Aug. 28. CD 9/3, under LB.

J. Kennon Perrin Co., 6000 W. Broad St., Richmond, Va. CA Approx. $500,000. three branch BANKS, RICHMOND, VA. First & Merchants Nat'l Bank, 827 E. Main St., Richmond, Va., Carl M. Lindner, Jr., State Planters Bank Bldg., Richmond, Va., archt.

▲ **Southwestern Constr. Co.,** Peoples Bldg., Charleston, W. Va., LB, $2,682,000. 3 story, 135-bed HOSPITAL, HUNTINGTON, W. VA. Cabell County General Hospital, Huntington, W. Va. Bids Sept. 2. CD 8/4.

▲ **William S. Smith Constr. Co.,** 2479 N. Edgewood Ave., Jacksonville, Fla., CA, Est. $1,000,000, HOUSES and SHOPPING CENTER, old fairground site, MIAMI, FLA. Austin-Scott, Inc., c/o E. E. Shad, 1570 Atlantic Blvd., Jacksonville 7, Fla.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

22 Indiana September 30 Michigan

STREETS AND ROADS

September 22 Indiana

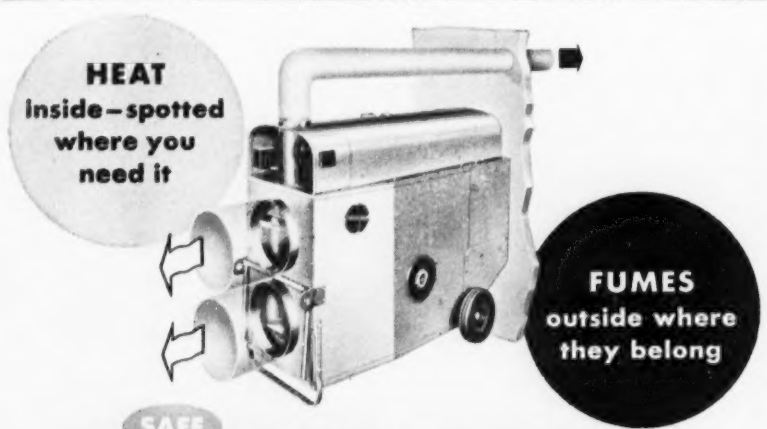
BIDS ASKED—BUILDINGS

Ill., Maywood—FACTORY, etc.—B.A. 9/31—American Can Co., 100 Park Ave., New York, N. Y., factory addn., office, 50x1000 ft. train shed, 28 ft. high and railroad tracks $650,000.

Ill., Chicago—YOUTH CENTER—B.A. 1/14—Young Men's Jewish Council, 76 and Phillips Ave., 2 story, part bsmnt., 30,000 sq. ft. youth center, $300,000. Fridstein Eng. Co., 228 N. LaSalle St., Zone 1, archts.

Ind., East Chicago—PLANT—Bids Asked—Linde Air Products Div. of Union Carbon & Carbide Co., 30 E. 42 St., New York, N. Y., plant addn. $85,000 Thos McKarg, 881 Main St., Buffalo, N. Y., archt.

Mich., Detroit—FACTORY—Bids Asked—Continental Motors Corp., 1470 Algonquin St., 1 story, brick, masonry factory unit, Kercheval Ave. $82,000, Robert Svoboda, 13332 Promenade St., archt.



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COMPANY _____

TYPE OF BUSINESS _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

SOON LETS CONTRACT—BUILDINGS

Ill., Lemont—PLANT OFFICE—Globe Oil & Refining Co., Lemont, soon lets contract 2 story, bsmnt., 27,000 sq. ft. refinery office $750,000. Perkins & Will, 309 Jackson Blvd., Chicago, Zone 6, archts.

Ind., Hammond—WAREHOUSE—Standard Oil Co. of Indiana 910 N. Michigan Ave., Chicago, 5, Ill., soon lets contract warehouse, $750,000 Lundsrom & Skubic, 53 W. Jackson Blvd., Chicago, Ill., archts. CD 8/12.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—Ohio Turnpike Comn., 139 E. Gay St., Columbus, Zone 15,

Ernst Constr. Corp., 75 Lathrop St., Buffalo, N. Y., LB $449,975, 1,822 tons fabricated structural steel;

Fort Pitt Bridge Works, Sheraton Hotel, Pittsburgh, Pa. LB $1,272,832, 4,480 tons fabricated structural steel for three roads sects. in Cuyahoga Co. Bids Sept. 9. CD 8/12.

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15,

W. L. Harper Co., 2910 E. Highland St., Norwood, Cincinnati, O. CA $1,084,136, est. $1,208,000, two bridges over Scioto River overflow, bridge over Pee Wee Creek and 3 mi. four-lane hy. between the bridges, Pike and Scioto Counties; CA $724,193, est. $804,750, twin bridges over Millers Run and 2 mi. four-lane divided hy., Scioto Co. Bids Sept. 4. CD 8/24, under Streets and Roads.

▲ **OHIO**—Ohio Turnpike Comn., 139 E. Gay St., Columbus, Zone 15,

Frank Mashuda Co., Greentree Rd., Pittsburgh, Pa., LB $11,114,500, 13.9 mi. Sects. 8, 9 and 10 of Ohio Turnpike, Trumbull and Portage Counties. Bids Sept. 9. CD 8/11.

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15,

W. J. Seidenstricker Co., 209 S. High St., Columbus, O. CA $611,360, est. $622,050, 1.25 mi. Rte. 23, incl. bridges over Norfolk & Western R.R., Pike Co.;

Baker & Hickey Co., 2170 Eakin Rd., Columbus, O., CA $1,336,960, est. $1,376,300, 1.29 mi. and underpass across the Norfolk & Western R.R., Scioto Co.;

John R. Jurgensen Co., Newton, O., CA $731,630, est. $800,850, 3.25 mi. Scioto Co. Grand total $2,719,290. Bids Sept. 4.

▲ **M. W. Kellogg Co.,** 225 Broadway, New York, N. Y., CA $1,750,000, constr. three 580-ft. tall rein.-con. chimneys at Cheshire, OHIO. Ohio Valley Electric Corp., 30 Church St., New York 8, N. Y. CD 8/22/52, under CA, Industrial Buildings.

▲ **Contracting & Material Co.,** 1235 Dodge St., Evanston, Ill., CA, $1,500,000, laying gas pipe line from concentration point near Joliet, to Chicago, (35 St. and Crawford Ave.,) ILLINOIS. Chicago District Pipeline Co., 20 N. Wacker Dr., Chicago, Ill., Awarded Aug. 24.

Simpson Constr. Co., 235 N. Ogden St., Chicago, Ill., LB, $264,334, operators house and enclosures on Congress Expressway Bridge, CHICAGO, ILL. City, City Hall, Chicago, Ill. CD 4/4/45.

▲ **MICHIGAN**—State Hy. Dpt., 222 Townsend St., Lansing, Zone 13,

L. A. Davidson Co., 213 E. St. Joseph St., Lansing, Mich. CA $1,398,133. est. $1,520,000. 2 built up railroad bridges, retaining walls to carry railroad tracks over Edsel Ford Expressway, CI X9 of 82-22-10 C1-U (U1-391 64), Wayne Co. CD 9/1, under LB.

Wayne Co., Christopher J. Mulle, drain comr., Cadillac Tower, Detroit, Mich. rejected bids Aug. 21, Wilkie Drain, Taylor, DETROIT, MICH. LB $499,000. CD 9/2, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Frank Messer & Sons, Inc., Paddock Rd., Cincinnati, O. CA $500,000. 2 story, 51x134 ft. OFFICE, Victory Parkway, between Cypress and McMillan St., CINCINNATI, O. Warwick Realty Co., c/o Paul Schell, archt., Clark Bldg., Pittsburgh, Pa., Aluminum Co. of America, lessee. Awarded Sept. 2.

Walter Kidde Constructors, Inc., 140 Cedar St., New York, N. Y., CA $600,000. 100,000 sq. ft. WAREHOUSE for six states at 1165 Kinnear Rd., COLUMBUS, O. Alexander Smith, Inc., Saw Mill River Rd., Yonkers, N. Y.

▲ **Salem Village No. 2, Inc.,** 4532 Salem Ave., Dayton, O., Own Forces. $1,107,600, 124 RESIDENCES and car ports, Curundu and Melgrove Aves., Redonda and Wilmore Sts., DAYTON, O.

▲ **Chipley Constr. Co.,** 1501 McArthur Ave., Dayton, O., Own Forces. $1,020,000, six APARTMENTS, Almore St., Alvin Ave., Nicholas Rd., DAYTON, O.

▲ **M. W. Kellogg Co.,** 225 Broadway, New York, N. Y., CA, Approx. $10,000,000, 30,000 bbl. per day fluid catalytic hydroforming unit at REFINERY, WHITING, IND. Standard Oil Co. of Indiana, 910 S. Michigan Ave., Chicago 5, Ill. CD 8/5.

Preisel Constr. Co., 950 Merchant St., Kankakee, Ill., CA, $150,000, FACTORY addn., BRADLEY, ILL. Kroehler Mfg. Co., Naperville, Ill. Madden & O'Connor 164 E. 154 St., Harvey, Ill., archts. Awarded Aug. 24.

Harvey A. Hanson, 1851 Elston Ave., Chicago, Ill., LB $793,602, 2 story, part bsmnt., brick Anderson SCHOOL, 1148 N. Honore Ave., CHICAGO, ILL. Bd. Educ., 228 N. La Salle St., Chicago, Zone 1, Ill. Bids Aug. 28.

Inland Constr. Co., 134 N. La Salle St., Chicago 2, Ill., CA, $500,000, 42,500 sq. ft., mezzanine, steel, brick, stone trim candy FACTORY, 2551 Elston Ave., CHICAGO, ILL. Dutch Mill Candy Co., 2222 Diversey Blvd., Chicago, Ill. Bids June 12, awarded Sept. 1. CD 6/12.

Poirot Constr. Co., 2001 Pershing Rd., Chicago 9, Ill., CA, $320,000, 40,000 sq. ft. WAREHOUSE and OFFICE addn., CHICAGO, ILL. U. S. Rubber Co., 4123 S. Crawford Ave., Chicago, Zone 32, Ill. A. Epstein

& Sons Co., 2011 Pershing Rd., Chicago, Zone 9, archts. Awarded Sept. 1.

Campbell, Lowrie, Lautermilch, 400 W. Madison Ave., Chicago, Ill., CA, $300,000, FACTORY addn., CICERO, ILL. Ceco Steel Products Co., 5701 W. 27 St., Cicero, Ill. Awarded Aug. 26.

Zincon Constr. Co., Elkhorn, Wis., CA, $100,000 FACTORY addn., CRYSTAL LAKE, ILL. Oak Mfg. Co., 1260 Clybourn St., Chicago, Ill. Awarded Sept. 1. CD 8/19.

H. B. Deal Constr. Co., Inc., 5517 Manchester Ave., St. Louis, 10, Mo., CA, 2 story OFFICE and FREIGHT HOUSE addns., loading dock, covered platform etc. 500 W. Front St., EAST ST. LOUIS, ILL. Wabash Railroad Co., J. C. Bousfield, ch. engr., Railway Exchange Bldg., 611 Olive St., St. Louis 1, Mo.

Cerling Constr. Co., 5745 W. Chicago Ave., Chicago, Ill., CA, $360,000. Emerson Elementary SCHOOL, Northwest Ave. and Woodcrest St., ELMHURST, ILL. School District No. 46, Elmhurst, Ill. Bids July 1, awarded Aug. 24. CD 7/13, under LB.

† **Lloyd Brothers,** Front and Irving Park Ave., Woodale, Ill., LB, $619,930, 2 story, part bsmnt., concrete, frame, masonry SCHOOL, GREAT LAKES, ILL. Ninth Naval Dist., Great Lakes Naval Training Station, Great Lakes, Ill. Bids Sept. 3. CD 8/19.

B. W. Constr. Co., 39 S. La Salle St., Chicago 3, Ill., CA, $345,000, 1 story NURSES and TECHNICIANS BUILDING, HIGHLAND PARK, ILL. Highland Park Hospital Assoc., 718 Glenview Ave., Highland Park, Ill. Bids Aug. 26, awarded Aug. 27. CD. 8/19.

Don L. Dise, Inc., 7210 Ogden Ave., Riverside, Ill., Owner Builds, $650,000, 50 HOMES, near LYONS, ILL. Emery C. Furrer, 64 W. Randolph St., Chicago, Zone 1, Ill., archt.

▲ **Elm Construction Co.,** 610 E. McKinley St., Mundelein, Ill. Owner Builds, $3,500,000, 350 HOMES west of MUNDELEIN, ILL. A. J. Del Bianco, 5501 Irving Park Rd, Chicago, Ill., archt.

J. Emil Anderson & Son Co., 1809 Balmoral St., Chicago, 40, Ill., CA, $220,000 PLANT OFFICE, Howard and Lehigh Aves., NILES, ILL. Onsrud Machine Works, 3910 Palmer St., Niles, Ill. Awarded Sept. 1.

E. W. Sproul Constr. Co., 1731 W. Madison St., Chicago 3, Ill., CA, $604,254, grade SCHOOL, near Plum Rd., PALATINE, ILL. School District 15, 101 N. Oak St., Palatine, Ill. Bids Aug. 26, awarded Sept. 4. CD 9/2, under LB.

▲ **Centex Constr. Corp.,** McAree and Sunset Rds., Waukegan, Ill., CA, $13,000,000, 1,350 HOMES, northwest of WAUKEGAN, ILL. Awarded Aug. 24.

F. H. Martin Constr. Co., 955 E. Jefferson St., Detroit, Mich. CA Est. $800,000. 3 story, brick, steel, concrete PLANT addn., Algonquin St., DETROIT, MICH. Continental Aviation & Engineering Corp., 1470 Algonquin St., Detroit, Mich. Robert Svodoga, 13332 Promenade St., Detroit, Mich., archt. CD 9/3.

Krieghoff Co., 6661 French St., Detroit, Mich. CA Est. $300,000. 2 story, brick, steel HOSPITAL, incl. clinic, LINCOLN PARK, MICH. Lynn Hospital, Bd. Trustees, Dr. Harvey Lynn, Lincoln Park, Mich. Bids Aug. 27. CD 9/2.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

September 22 Iowa

STREETS AND ROADS

September 22 Iowa September 25 Minnesota

Tex., Dallas—B.A. 9/29—City, City Hall, Main and Harwood Sts., asph. paving, Skillman St., two 30-ft. divided roadways to N. W. Hy. $543,043; street imprvs. to eliminate reverse curve, connecting Lamar St. across Corinth St. under Santa Fe R. R. $98,310. Koch & Fowler, 3900 Lemmon St., engrs. CD 5/8/52.

▲ **Texas**—OIL LINE, etc.—Bids Asked—Pasotex Pipe Line Co., Womble Blvd., El Paso, 150 mi. 10 in. welded joint crude oil trunk line, from near Snyder westward to near Wink in Winkler Co. $4,000,000; compressor stations, near Wink, Winkler Co. $275,000; near Snyder, Scurry Co. $300,000; near Midland, Midland Co. $250,000.

BIDS ASKED—BUILDINGS

▲ **Tex., Austin**—HOSPITAL—B.A. 9/24—St. David's Community Hospital, 606 W. 17 St., 3 story 65,000 sq. ft. 100-bed, rein.-con. frame, brick Hospital. $1,420,000. Extended date. Page, Southerland & Page, 602 West Ave., and Wm. R. O'Connell, 305 Perry-Brooks Bldg., archts. CD 8/18.

Neb., Sidney—HOSPITAL—B.A. 9/29—Cheyenne Co., Sidney, hospital. $750,000. CD 5/1/51.

▲† **Mo., Overland** (St. Louis 14 P.O.)—RECORDS CENTER—B.A. 9/30—U.S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., 6 story, 282x728 ft., rein.-con., masonry block military personnel records center, 1 story, 103x236 ft. adjacent bldg. for cafeteria and assembly hall, incl. site grading, sodding, seeding, roads, parking areas. ENG-23-028-54-11B, $18,000,000. Extended date. Associated Architects & Engineers, Inc., International Office Bldg., 722 Chestnut St., St. Louis, Zone 1, engr.-archt. CD 8/4.

Tex., Dallas—SCHOOL—B.A. 9/29—Dallas Independent School Dist., 3700 Ross St., Gaston Park Area Elementary School. $750,000. George L. Dahl, 2101 N. St. Paul St., archt. CD 3/13.

Mo., Independence—AUDITORIUM—B.A. About 10/1—Reorganized Latter Day Saints Church, Isreal A. Smith, pres., Independence, general contract auditorium, front, foyer and entrances, $500,000. Bloom-

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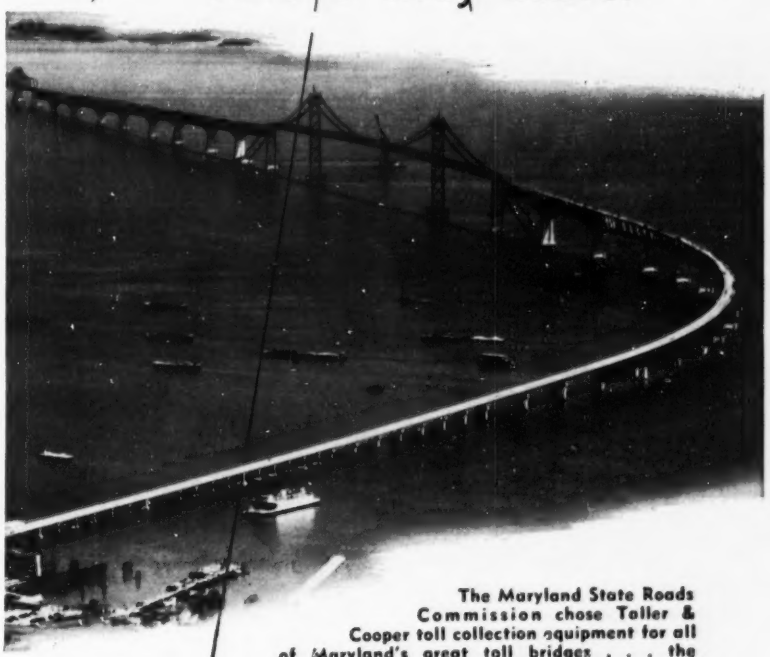

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garten & Frohwerk, Railway Exchange Bldg., Kansas City, Mo., archts. CD 11/26.

Tex., Corpus Christi—HIGH SCHOOL—B.A. 10/8—Sisters of Incarnate Word & Blessed Sacrament, c/o Mother Patricia, 503 Last St., Senior High School, $600,000. Wade-Gibson & Martin, Med. Prof. Bldg., archts. H. P. McElhaney, Wilson Tower, Corpus Christi, and T. A. Vernor, 304 Green Ave., Taft, engrs CD 8/31

Tex., Longview—WAREHOUSE, etc.—Bids Asked—Resistol Hat Co., Garland, materials and stock storage warehouse $100,000; fur felting plant for hat mfg. CD 7/9.

SOON LETS CONTRACT—BUILDINGS

▲ **Tex., Dallas**—GARAGE—Texas Bank & Trust Co., Main and Lamar Sts., soon lets contract 4 story, bsmnt. auto drive-in parking garage. $1,275,000. W. G. Knoebel & Wm. E. Dady, 906 Sidney St., St. Louis, Mo., archts. CD 8/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **MISSOURI**—Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington, Va., rejected bids Aug. 20. Madison County Bridge over Marble Creek Missouri Forest Hy. Proj. 37-A Part 3, Fredericktown. LB $108,550. CD 8/27, under LB.

Haggart Constr. Co., 667 2nd Ave. N., Fargo, N. D., LB $114,112, paving Dist. 7, GRAFTON, N. D. City, Grafton, N. D. L. Richmond, 901 N. 6 St., Grand Forks, N. D. Bids Aug. 31. CD 8/6.

† **Buchanan Hauling Co.**, 329 E. 27 St., North Kansas City, Kan. CA $150,190. Levees and diversion canal Lot III at Arkansas River and Cow Creek, Hutchinson, Inv. 34-066-54-4, KANSAS. U. S. Eng., Box 61, Tulsa, Okla. Bids Aug. 25.

▲ † **Mississippi Valley Eng. & Constr. Co.**, 787 S. Willett St., Memphis, Tenn., LB $1,032,633, est. $1,731,059, bank stabilization and channel, ENG-34-066-54-5, Sequoyah Co., OKLAHOMA. U. S. Eng., P. O. Box 61, Tulsa, Okla. Bids Aug. 27. CD 8/19.

Magnolia Pipe Line Co., Magnolia Bldg., Dallas, Tex. Own Forces. $218,500, 20 mi. 6-to 8-in. addnl. crude oil pipe lines, Midland area, Midland Co., TEXAS. CD 7/9.

Sunray Oil Corp. & Associated Companies, 1st Natl. Bldg., Tulsa, Okla., Own Forces. $375,000, water injection proj., in Kelly-Snyder Field; $325,000, gas injection facilities to recover oil, in Diamond M. field zone, Snyder area, both Scurry Co., TEXAS. CD 11/11.

Pelphrey-Basham Co., Electric Bldg., Fort Worth, Tex. CA $537,178, water lines, AUSTIN, TEX. Water Control & Imprvt. Dist. 5, Court House, Austin, Tex. CD 7/21 under LB.

City, Bryan, Tex., Own Forces. $65,000, some c.i. water line extens. into recently annexed areas, BRYAN, TEX. CD 6/30.

City, Bryan, Tex., Own Forces. $60,000, storm sewers, BRYAN, TEX. CD 6/30.

Holland Page, 705 W. 10 St., Austin, Tex., LB $79,397, est. $40,000. Proposal 1, approx. 60,000 lin. ft. c.i. water pipe laying, existing WW sys. rehabilitation; **Hales & Moore**, Snyder, Tex., LB $74,416, Proposal 2, approx. 60,000 lin. ft. cement asbestos pipe, WW., FRUITDALE, TEX. City, Fruitdale, Tex. Bids Aug. 24. CD 8/5.

COLORADO—State Hy. Dpt., 518 State Office Bldg., Denver,

Lowdermilk Brothers, 1950 W. Dartmouth St., Denver, Colo., CA $442,486, est. $492,051, overpass structures, approaches ramps and roadway 0.199 mi. Colorado Blvd. and Valley Hy., UI 002-2 (26) Unit 6, Denver Co. Bids Sept. 2, awarded Sept. 4. CD 8/24.

COLORADO—State Hy. Dpt., 518 State Office Bldg., Denver,

Harrison & Atchison Constr., 1566 S. Bannock St., Denver, Colo., CA, $473,940, est. $480,766, plant mixed asph. 5.271 mi. SH No. 10, F 922-1 (8), La Plata Co. Bids Sept. 3, awarded Sept. 4. CD 8/24.

† **Hydro-Point Engineering Co.**, Hamilton, Mont. CA $39,552. one 52 in. inside diam. welded-plate steel discharge pipe and accessories for Crow Creek pumping plant, Three Forks Division, Missouri River Basin Proj., Spec. DS 3987, MONTANA. Bureau Reclamation, Dpt. Interior, Bldg 1 A, Denver Federal Center, Denver, Colo. Bids July 23, awarded Aug. 26. CD 6/29.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **C. F. Haglin & Sons**, 123 Bryant Ave. N., Minneapolis, Minn. CA Est. $6,000,000. OFFICE, MINNEAPOLIS, MINN. Prudential Insurance Co. of America, 763 Broad St., Newark, N. J. Bids Aug. 28. CD 8/12.

E. R. Corry, 2810 Harriet Ave., Minneapolis, Minn. CA Approx. $150,000. general contract 1 story, 161x236 ft., sausage PLANT, incl. loading dock, garage, coolers, etc., University Ave. N. E. and 27 St., MINNEAPOLIS, MINN. Schweigert Meat Co., 2603 Emerson Ave. N., Minneapolis, Minn. CD 2/4.

▲ **W. Murphy & Son**, 416 N. Y. Bldg., St. Paul, Minn. CA Est. $3,000,000. general contract 2 story, 375 ft. long, 100,000 sq. ft., E-shaped Research LABORATORY, East Ave. and Hy. 12, ST. PAUL, MINN. Minnesota Mining & Mfg. Co., 900 Fauquier Ave., St. Paul, Minn. CD 9/9.

The Weitz Co., Inc., 406 Fleming Bldg., Des Moines, Ia., CA, $800,000 aircraft PLANT addn., DES MOINES, IA. Solar Aircraft Co., 1901 Bell St., Des Moines, Ia. CD 8/27.

Affton School Dist. Bd. Educ., Charles J. Mesriler, supt. Schools, 8250 MacKenzie Rd., Affton 23, Mo. rejected bids Aug. 17, brick, stone, steel, concrete, H-shaped masonry high school, Sect. A 80x279 ft., Sect. B 37x258 ft., Sect. C 104x152 ft., 88x97 ft., 40x108 ft., 8521 MacKenzie Rd., AFFTON (ST. LOUIS 23, P. O.) MO. LB general contract $765,796. New bids Sept. 14. CD 8/28, under LB.

The Ideson Co., Inc., 432 S. Sappington Rd., Kirkwood 22, Mo. CA 1 story, 50x100 ft., brick, concrete, steel factory, ST. LOUIS, MO. Pandjiris Weldment Co., 515 Northrup Ave., St. Louis 10, Mo.

Assenmacher Constr. Co., 625 N. 17 St., Lincoln, Neb. CA $642,853. general constr. VOCATIONAL ARTS BLDG., at Kearney State Teachers College, KEARNEY, NEB. State Normal Bd., Lincoln, Neb. Bids Aug. 29. CD 9/3, under LB.

Cooper Constr. Co., 110 S. 46 St., Omaha, Neb., CA $150,000. concrete WAREHOUSE, OMAHA, NEB. Union Pacific R. R., W. D. Perkins, ch. engr., 1416 Dodge St., Omaha, Neb.

† **Henry H. Hackett & Sons**, Rapid City, S. D., LB $555,326, AMMUNITION MAINTENANCE FACILITIES, Sioux Ordnance Depot, Inv. 25-066-54-16, SIDNEY, NEB. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Sept. 3. CD 8/10.

▲ **A. W. Soderberg Constr. Co.**, 910 E. Indianapolis St., Wichita, Kan. CA Approx. $1,000,000. OFFICE, WICHITA, KAN. John R. Peach, 823 Quincy St., Topeka, Kan. Bureau Internal Revenue, lessee. W. I. Fisher, 301 S. Main St., Wichita, Kan., archt.

L. L. McCandless, c/o Niggli & Gustafson, archts., 4303 Avenue F, Austin, Tex. Owner Builds. $850,000. $102-unit addn. to Terrace Motor HOTEL, AUSTIN, TEX. CD 9/9.

Lewis & Lamberth, 3916 Gaston St., and **Laughlin & Silver**, 1009 Elm St., Dallas, Tex., Purchases, Day Labor. $418,200, Unit 1, twelve 2 story APARTMENT units; $369,000, Unit 2, five story APARTMENT units, DALLAS, TEX. CD 7/9.

Dumas Realty Co., 2432 W. Holcombe St., Houston, Tex. Own Forces. $336,000, 12 masonry, frame DWELLINGS, concrete slab fdn.; $300,000, 18 frame dwellings, concrete slab fdn., near HOUSTON, TEX. CD 7/2.

Greenwood, Inc., c/o T. J. Mogatto Assoc., Lamarque, Tex., Owner Builds. $300,000, 36 DWELLINGS; $391,500, 34 DWELLINGS near LAMARQUE, TEX. CD 6/5.

DeWitt Thomas & Norman Snyder, Longview, Tex., Purchases, Day Labor. $93,600, laundry PLANT unit, LONGVIEW, TEX. W. L. Kelly, Glover-Crim Bldg., Longview, Tex., archt.

W. D. Ferguson & Sons, Box 446, Brownsville, Tex. LB $633,000, est. $350,000. HIGH SCHOOL and alterations, remodeling existing SCHOOL, SEGUIN, TEX. Seguin Independent School Dist., Seguin, Tex. Bids Sept. 4. CD 8/6.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

September 30 October 7 California

STREETS AND ROADS

October 1, 7 California

† **Arizona**—SUB-STATION—B.A. 9/29—Bureau Reclamation, Dpt. Interior, Phoenix, constr. Boundary substation, Davis Dam Project, Spec. 304-C-96. L. N. McClellan, Bldg. 1A, Denver Federal Center, Denver, Colo., ch. engr.

SOON LETS CONTRACT—BUILDINGS

Wash., Parkland—DORMITORIES—Pacific Lutheran College, Parkland, soon lets contract two 3 story, part bsmnt., steel frame dormitories, $600,000. Lea, Pearson & Richards, Tacoma Bldg., Tacoma, archt. CD 5/6.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

UTAH—State Road Comn., Salt Lake City,

Olaf Nelson Const., Logan, Utah, LB $122,708, est. $136,768, 2 in. road mix bit. 4.711 mi., Moroni-West, Sanpete Co. Bids Sept. 1.

C & R Builders, Inc., 4318 Roosevelt Way, Seattle 5, Wash., LB $113,559, rectifier bldgs., pads, ducts, etc. at City Light Olympic, Gatewood, Avalon and Fremont Sub-stations, SEATTLE, WASH. City, County-City Bldg., Seattle 4, Wash. E. R. Hoffman, Seattle, Wash., city light supt. Awarded Sept. 2.

† **CALIFORNIA**—Bureau P. Rds., Dpt. Commerce, Flood Bldg., San Francisco,

Eaton & Smith, 1215 Michigan St., San Francisco, Calif., CA, $603,306. grading, bridges near Shaver Lake Proj. Calif. FH-48-E, Sierra National Forest, Fresno Co. Bids Sept. 1.

† **Nomellini Constr. Co.**, P.O. Box 1177, Stockton, Calif., LB, $508,128, earthwork, structures, North Section, Unit 3, Part 2 Madera Distribution System, Spec. DC 4007, CALIFORNIA. Bureau Reclamation, Dpt. Interior, Friant, Calif. Bids Sept. 4. CD 8/19.

▲ **CALIFORNIA**—State Div. Hys., P. Wks. Bldg., Sacramento,

Guy F. Atkinson Co., 10 W. Orange Ave., South San Francisco, Calif., CA, $4,122,382 grading, tunnel, structures 4.5 mi. Waldo Approach between Manzanita and Golden Gate Bridge, Marin Co. Bids Aug. 19, awarded Sept. 3. CD 8/24, under LB.

Nomellini Constr. Co., 939 Marengo Rd., Stockton, Calif., LB, $626,562, Alternate A; $609,278, Alternate B;

Condick Co., 806 Hearst Ave., Berkeley, Calif., LB $421,-657, Alternate C, storm drainage structures in Mormon Channel, STOCKTON, CALIF. City, City Hall, Stockton, Calif. Bids Aug. 31. CD 8/12.

BUILDINGS

LOW BIDS AND CONTRACTS

W. M. Yeaman, 601 S. 1 St., Yakima, Wash. LB, $999,-184, general contract, 3 story, rein.-con. CRIMINAL WARD BLDG., Eastern State Hospital with 63x85 ft. rotunda, with three 143x31 and one 53x51 ft. wings, MEDICAL LAKE, WASH. State Dpt. P. Institutions, Olympia, Wash. Bids Sept. 2. CD 8/11.

Waldo Hardie, Eugene, Ore., CA, $400,000. Department STORE, EUGENE, ORE. Allied Stores, Inc. Bon Marche, Seattle, Wash. Awarded Sept. 5.

† **F. E. Young Constr. Co.**, 2141 Main St., San Diego, Calif. CA $807,000. SUBSISTENCE BLDG., Naval Amphibious Base, NOY 74060, CORONADO, CALIF. P. Wks. Office, Eleventh Naval Dist., San Diego, Calif. CD 8/13, under LB.

Acme Constr. Co., 827 13 St., Modesto, Calif., CA, $992,518 ACADEMIC BLDGS. and facilities; BOYS GYMNASIUM at Pittsburg Senior High School, PITTSBURG, CALIF. Pittsburg Unified School District, 250 School St., Pittsburg, Calif. Bids Aug. 31, awarded Sept. 2.

Morris Daley, 1350 Howard Ave., Burlingame, Calif., LB, $551,000, Carlmont High SCHOOL addns., incl. gymnasium, music wing and pool, Belmont, REDWOOD CITY, CALIF. Sequoia Union High School, Broadway and El Camino Real, Redwood City, Calif. Bids Sept. 2.

CANADA

BIDS ASKED—BUILDINGS

▲ **Ont., Toronto**—HOUSNG—B.A. 10/8—Housing Auth. of City of Toronto, City Hall, Buildings 24 and 26, in Regent Park Housing. $1,200,000. Plans deposit $50, J. E. Hoare, Jr. 481 Eglinton Ave. W., archt. CD 7/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Grant Contg. Co. Ltd., 26 Queen St. E., Toronto, Ont., LB, $579,600, 42 in. water mains in Queen St. and Beech Ave. to Dixon Ave. and Kingston Rd., TORONTO, ONT. City, City Hall, Toronto, Ont. Leslie B. Allan, comr. Works. CD 2/2/50.

▲ **Mannix Ltd.**, 660 St. Catherine St. W., Montreal, Que., LB, $1,298,732, reconstr. wharf, BAIE COMEAU, QUE. Dpt. P. Wks., Dom. Govt., Hunter Bldg., Ottawa, Ont. Bids Sept. 3. CD 8/13.

BUILDINGS

LOW BIDS AND CONTRACTS

Pearson Constr. Co. Ltd., 1019 Erin St., Winnipeg, Man., CA, $400,000, 60-bed HOSPITAL addn., SELKIRK, MAN. Selkirk General Hospital, Selkirk, Man. Awarded Sept. 2. CD 1/23.

▲ **B. Perini & Sons Ltd. (Canada)**, 44 Jackes Ave., Toronto, Ont., LB, $2,566,450 food and drug LABORATORY, OTTAWA, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Sept. 2. CD 7/23.

Woodall Constr. Ltd., 1711 Walker St., Windsor, Ont., CA, $292,000, reconstructing 1 story, 62x123 ft., concrete block, paint PLANT, WINDSOR, ONT. Rinshed-Mason of Canada Ltd., 845 Wyandotte St. W., Windsor, Ont. Giffels & Vallet of Canada Ltd., Trust Bldg., Windsor, Ont., engrs. Awarded Sept. 1.

▲ **Collet Freres Ltd.**, 1978 Parthenais St., Montreal, Que., LB, $8,000,000, Notre Dame HOSPITAL addns., MONTREAL, QUE. Bd. Governors, Notre Dame Hospital, 1560 Sherbrooke St. E., Montreal, Que. Crevier, Belanger, Lemieux & Mercier, 1050-56 Pratt Ave., Outremont, Que., archts. CD 10/24/51.

Better Home Builders, 21 Maplewood Ave., Mount Royal, Que., Owner Builds, CA, $510,000, 41-suite APARTMENT, Lombard Crescent and Portland Ave., MOUNT ROYAL, QUE.

U. S. POSSESSIONS

BUILDINGS

LOW BIDS AND CONTRACTS

† **Hawaiian Dredging Co., Ltd.**, P.O. Box 3466, Honolulu, T.H., CA $507,920, Quality Evaluation LABORATORY at U. S. Naval Ammunition Depot, Lualualei Branch, NOY 76694, OAHU, T.H. Officer in Charge of Constr., 14th Naval Dist., Navy 128, P.O. Box 94, c/o F.P.O. San Francisco, Calif.

AMERICANS ABROAD

BIDS ASKED—HEAVY CONSTRUCTION

† **Bermuda**—AIR BASE—B.A. 10/22—U. S. Eng., 346 Broadway, New York 13, N. Y., U. S. A. (a) demolition of 3 wooden structures (b) const. b. conc. pavement for runway and taxiway exten. and motor pool area approx. 40,000 sq. yd. (c) exten. drainage sys. (d) exten. airfield lighting sys., Kindley Air Force Base, ENG-30-347-54-1. Plans deposit $45.

FOREIGN

BIDS ASKED—HEAVY CONSTRUCTION

New Zealand—B.A. 12/1—New Zealand State Hydro-Electric Dpt., Sect. 45, Napier Dist., Wellington. 466 galvanized steel transmission line towers for Tuai-Gisbourne 110 kv line, Contr. 241. Plans and specifications may be seen at New Zealand Govt. office, Wash., D. C.

(Proposal Advertisements see pp. 95 to 98)

Home starts hurt by hard money in some areas, study finds

But some builders are optimistic. They get financing, even though it costs more than it did previously

The higher cost of mortgage money is having a definite effect on home building. But don't expect residential construction to go into a tailspin. In some areas, starts may be cut back anywhere from 25% to 50% during the second half of this year from original plans. In other places, building is continuing at a high level and builders are optimistic.

Mortgage lenders are asking for substantial discounts on VA and FHA mortgages—as high as 8% in some places. And rates on conventional mortgages are higher than they were a year ago. Lenders, too, are tough about down payments and amortization periods. But mortgage money is available anywhere for those who can pay the price. In some places, it is still possible to borrow on 4½% VA and FHA mortgages at par, or close to it.

The situation seems worst on the West Coast and in Houston, Tex., where volume of home building has been particularly heavy since the war. On the West Coast, mortgage money has always been a little harder to get than in other places, because the demand for mortgages consistently has outrun the local supply of mortgage money.

Those are the major conclusions which emerge from an ENR survey of home builders in 17 cities around the U. S. Most of the people ENR talked to believe that the postwar housing boom has lost some of its steam. But not all of them place this entirely on the higher cost of mortgage money. Some say that, in their particular areas, the supply of new homes was beginning to catch up with demand.

• **Glad**—In fact, some established builders are glad to see things slow down. Says one in Miami: "The situation is as rugged as a mountain trail, but if we weed out the ribbon clerks and high-binders the people who want new homes will benefit. And maybe the old timers who pioneered this area can stay in business."

To meet the new conditions, some builders are switching to lower-priced houses, to bring monthly carrying charges within the reach of buyers who can afford only a very small down payment. In Houston, for example, quite a few builders are now trying to put up houses that would sell for as little as $7,500. But, on the other hand, there are builders in the same area who are getting out of the low-priced field, because they have trouble obtaining VA and FHA financing. And you can see these same conflicting trends in other parts of the country.

Builders in nearly all the cities ENR surveyed are pretty much ignoring the Federal National Mortgage Assn.'s one-for-one plan. That's the setup under which builders who want mortgage commitments from Fanny May must buy an equivalent amount of mortgages from FNMA's portfolio, and sell them in the open market. FNMA has reported (ENR Sept. 10, p. 23) that about $90 million worth of its mortgages have been spoken for so far. But the great bulk of these are held on option by builders, to be bought only if the builders succeed in getting an acceptable resale price for them from mortgage investors.

Here are the highlights on a city-by-city basis:

• **San Francisco**—Most builders say they have been cutting down drastically on new home starts in the second half. For instance, one big builder who normally builds 50 or 60 houses a month now plans to put up about 20 each month during the second half. This builder has the land developed for 600 homes.

• **Los Angeles**—The guess here is that out of a total of 80,000 to 85,000 potential starts for this year, about 10,000 to 15,000 will not be built. A number of builders here are only going ahead with units for which they are definitely committed. Discounts are running from 6% to 9% on VA and FHA mortgages. Best example of the financing troubles here is a proposed 10,000-unit suburban development where the land was bought, model homes built, and considerable newspaper publicity created. Now the whole project is being held up because of financing difficulties.

• **Salt Lake City**—There has been quite a cutback here on planned starts, though nobody will estimate how much. Houses are already in pretty good supply here, and this may be as much of a factor as the higher cost of mortgage money. Two of the region's largest builders are making no new commitments, merely finishing their projects.

• **Houston**—Estimates are that builders in this boom area have cut back starts by 50%. Observers say that very few builders who can't get VA or FHA mortgages are switching to conventional mortgages. The larger down payments make it very hard to sell houses.

• **Tulsa, Okla.**—There is no building slump here. Most builders are pretty optimistic. The VA office here predicts a "fair increase" in the number of VA-financed houses built in Tulsa during the next six months or so. And local savings & loan association recently announced it is entering the VA market after two-years' absence.

• **Kansas City**—Almost all builders, except marginal operators, expect to maintain construction at levels equaling the last 12 months. Some expect to do better. One reason for this is the 11-week construction strike in this area which ended July 28. That created a big backlog of demand. Conventional mortgages have always been pretty common in this area, and builders find them still easy to get.

• **St. Louis**—Builders are busy here, too, because of a long strike this summer. But one estimate is that the strike has cut the number of houses that can be completed in the Greater St. Louis area this year from 10,500 down to 7,500.

• **Lincoln, Neb.**—There have been some cutbacks here compared with last year, but this doesn't seem to be due to a lack of mortgage money. Some lenders feel that supply of homes is getting into balance with demand. Mortgage money is fairly easy to get. Rates on conventional mortgages range from 4½% to 5½%, somewhat lower than in many other parts of the U. S.

• **Minneapolis**—Fall starts for winter

completion will be off anywhere from 25% to 35%. Conventional mortgage rates here range between 5% and 5¼%, with quite a few loans being made at 6%. One mortgage broker says he sees more individual buyers than usual arranging their own financing on new homes. New houses selling for $15,000 and up are moving rather slowly, while new three-bedroom ranch-type homes in the $12,000-to-$12,500 class are doing much better.

• **Chicago**—There are no definite signs that construction of individual homes and tract developments is falling off here, but financing is harder to find. The typical rate on conventional mortgages here is 5% to 5¼%.

• **Detroit**—One estimate here is that builders are cutting back their plans by 25%. But not all are doing this. One of the biggest firms thinks there's a chance it may break the sales record it set last year. VA and FHA mortgages are very hard to find, and while conventionals are not too hard to get, that doesn't help much. The reason is that about 80% of potential home buyers around Detroit are factory workers, who can't accumulate the big down payments required.

• **Cleveland**—Home building here is continuing at high levels, about the same as last year. But plans for next year will be cut anywher from 10% to 15%. People here are getting more selective about houses. As a result builders in the cheap home field are upgrading out of the $10,000-to-$15,000-range. On the other hand, builders of top-price houses are now offering houses in lower ranges.

• **Nashville**—Not much evidence here that builders are cutting down. In fact, reports are the mortgage situation is loosening up. Local people say there is plenty of 5% money available, some mortgages run higher.

• **Pittsburgh**—All but one of six builders surveyed here said they would not complete as many houses this year as they planned originally. Of about 3,000 units originally planned by these six builders, it now looks as if they'll finish about 2,500. FHA and VA paper is still not too hard to find: Two commercial banks and one savings bank in this area report they are still making "plenty" of these guaranteed loans. On conventionals, the typical range is from 4¾% to 5¼%.

• **Miami**—Home building here is ahead of last year, though a few builders have been forced to cut back because of financing difficulties. Many builders who can't get VAs or FHAs have turned to conventionals, where the rate ranges from 4¾% to 5½%. Actually, more FHAs are being granted here than last year—some mass builders have switched to cheaper houses to take advantage of the low (5%) down payment.

• **Philadelphia**—Home builders here are cutting back programs about 20%. For instance, one builder in the northeast section who was building 100 homes had firm commitments for the first 50 and deposits for the rest, he has just returned the deposits on the second 50 and will not build them.

• **Boston**—Mortgage money here is in fairly good supply, according to lenders. Builders have a different story: They say are cutting back on construction. However, VA and FHA mortgages are fairly easy to get in this area. On conventionals, the rate ranges from 4½% to 5%.

Capital spending to drop in last 1953 quarter

Spending for new plant and equipment by U. S. business will drop off slightly in the fourth quarter of this year. But total capital spending this year will be 5% ahead of 1952.

This outlook, based on business plans in August as reported to government agencies, means 1953 will be the biggest year in history for plant and equipment investment. The total is expected to run about $27.8 billion, compared with $26.5 billion in 1952.

Except for the railroads, every major section of industry will wind up by spending more this year. It's no surprise that public utilities are out in front with a 15% gain over 1952. Non-durable goods industries, such as chemicals, food, and paper, are next. They will increase capital outlay about 8%. Durable-goods manufacturers edged up 3%.

Total spending in the fourth quarter is estimated at an annual rate of $27 billion ($28.4 billion, third quarter).

CONSTRUCTION TRENDS

Industrial building doesn't depend on interest rates; corporations have plenty of internal funds to spend

Construction men are not expected to be financial analysts, but contractors who do a lot of industrial building are vitally concerned with where the corporate funds that will finance their work are coming from. This is especially true now, when money is more expensive to borrow than it has been in many years, and the stock market is in the doldrums.

That's why it is worth analyzing the sources of the money that business spends on new plants and equipment. If you do, this fact emerges: Borrowed money and common stock are by no means the most important sources of construction money.

In 1952, for instance, about 45% of industry's record-breaking capital outlays came from depreciation allowances. About one-third came from retained earnings. Only around 22% came from the securities markets.

In other words, the volume of industrial spending for construction depends largely on industrial earnings, rather than on interest rates. This year's McGraw-Hill survey of business capital spending shows that manufacturers have preliminary plans to spend about $9.3 billion a year from 1954 through 1956—and will spend about 50% more than that if business continues to be excellent. If manufacturers run into heavy weather, they plan to cut capital outlays to about $6 billion a year.

They could finance this minimum capital spending program, even if they had practically no retained earnings available. The McGraw-Hill survey indicates that depreciation reserves of manufacturers will increase from about $6 billion in 1952 to $7.8 billion in 1956.

If, however, earnings declined only slightly, manufacturers could easily carry out their present plans to spend $9 billion-plus each year from 1954 through 1956, for corporate profits are now running at very high levels—higher than at any time since the record year of 1950. The McGraw-Hill Dept. of Economics estimates that after-tax profits of all U. S. corporations during the first half of this year were at an annual rate of $20.4 billion, compared with $18.7 billion last year, and $19.7 billion in 1951.

Humphrey's refund

His offer to bondholders goes over like hotcakes

Secretary of the Treasury George Humphrey, whose attempts this year to put the federal debt on a sound basis have sometimes been upsetting to the construction business, brought his objective a little closer when he successfully refunded $8 billion in maturing bonds last week.

Humphrey had offered owners of these bonds a choice between a one-year certificate paying 2⅛%, and a three-and-a-half-year note paying 2⅞%. Investors realized that these terms were generous. For holders of only about 3¼% of the maturing bonds asked for cash. Owners of a surprisingly large percentage of bonds—about 40%—took the longer-term note in preference to the short-term certificate.

This puts Humphrey one small step nearer his objective of "lengthening" the debt. Since World War II, Treasury chiefs under President Truman had offered short-term issues, usually about one year in maturity, whenever government securities came due. Their reason was that interest rates were lower on short issues.

But the Republicans believe that this policy is dangerous, since the result has been that about 40% of the total marketable U. S. debt comes due between now and next June. This will force the Treasury to borrow frequently and for large amounts, thus putting it at the mercy of market conditions.

This was the reason why Humphrey last April put out an issue of $1.6 billion in 30-year bonds at 3¼%. But his offering had the effect of driving up rates on corporate and municipal securities and on mortgages, all of which compete with long-term governments as outlets for investors. This time, Humphrey was much more cautious, so he succeeded in stretching out the debt slightly without making money tighter.

Construction equipment is close to 1952 volume

According to government reports, shipments of construction machinery during the first half of this year were only slightly below the record level of 1952.

First-half shipments totaled $451 million, 3.5% less than the similar 1952 period.

For the second quarter of 1953, shipments were $235.5 million, about 3.2% under the 1952 quarter.

Some types of equipment reached record levels in the first half. The sharpest rise was in tracklaying tractors, where shipments totaled $180 million, 10.4% above 1952. Machinery for mounting on tractors totaled $42 million, up 5.3%. Shipments of power shovels and cranes with a total of $108 million, were up 3.2%.

There were sharp declines in some other equipment categories. First-half shipments of road construction and maintenance machinery were down 21% from last year, with a total of 73 million. Dollar value of off-highway trucks was $15 million, down 23%. The biggest percentage decline was in heavy duty wheel-type tractors, which were down 38% to a total of $27 million.

Plywood price cuts set off new orders

Recent sharp price cuts in Douglas fir plywood have brought the price of quarter-inch plywood for interior use down to $80 per thousand bd ft from $90, the price most companies were quoting late last month.

As a result, orders are picking up. Some of the leading producers of Douglas fir plywood have returned to the five-day week at plants which had been operating on a four-day basis or which had been temporarily shut down.

One reason for the plywood price cuts: the heavy volume of production this year. For the first 35 weeks, production was more than 2.2 billion bd ft, up about 20.4% over the same 1952 period.

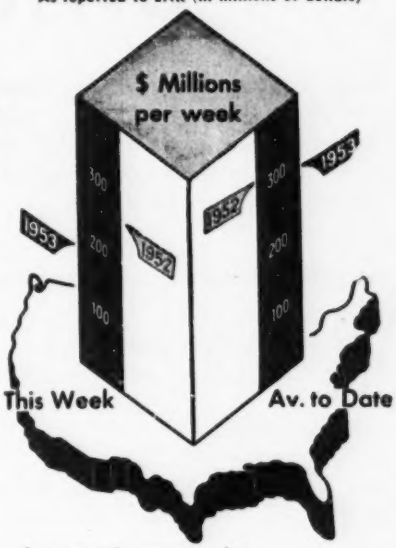
Business briefs . . .

• **Mackinac financing still indefinite**—B. J. Van Ingen & Co., Inc., Wall Street investment house which hopes to form a syndicate to underwrite a proposed three-mile bridge across the Straits of Mackinac, says plans for the $100-million issue are still indefinite. One possible reason: the huge volume of corporate and municipal financing already scheduled for this fall.

• **Proposed expressway shelved**—The Michigan Turnpike Authority has postponed plans for a turnpike from Detroit to Toledo, because the city of Monroe, Mich., has refused to give up plans for a proposed freeway to Toledo. Meanwhile, the authority has begun plans for a turnpike to Bay City. Probable cost: over $100 million.

Activity This Week

As reported to ENR (in millions of dollars)



Amount of contracts let

	This Week*	Cumulative 38 wks 1953	1952	% chge
Federal	$21.1	$1,138.9	$3,840.6	−70
State and municipal	58.1	3,667.3	3,095.3	+18
Total pub.	79.2	4,806.2	6,935.9	−31
Total priv.	101.6	6,315.0	5,002.9	+26
U. S. total	$180.8	$11,121.2	$11,938.8	−7
Contracts by type of work				
Waterworks	$3.3	$178.3	$167.5	+6
Sewerage	6.2	295.4	217.8	+36
Bridges	12.8	554.8	268.8	+93
Highways	16.7	1,301.2	1,142.3	+14
Earthwork, waterways	1.7	297.9	362.3	−18
Buildings:				
Public, excl. hsg.	30.5	1,241.1	3,649.4	−66
Housg., pub.	0.6	316.5	503.6	−37
Housg., priv.	52.1	2,681.3	2,210.1	+21
Commercial	22.0	892.5	455.8	+96
Industrial	22.3	2,001.0	1,964.4	+2
Unclassified	12.6	1,361.4	978.8	+39
Total	$180.8	$11,121.2	$11,938.8	−7

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

* 4-day week

New capital for construction

	Week of Sept. 10 1953	Cumulative 37 Wks 1953	% chge 1952-53
Corporate securities	$104.2	$3,368.4	+26
State & municipal:			
Excluding housing	31.3	3,005.7	+34
Housing	0.2	212.9	−2
Federal loans	1.8	86.6	−72
Federal aid	...	770.0	+40
Total non-federal	$137.2	$7,444.9	+25
Federal approp.:			
In U. S.	...	1,566.7	−78
Outside U. S.	...	28.9	−84
Total new capital	$137.2	$9,040.2	−33

ENR indexes (Base Years = 100)

	1953	1913	1926	1949
Construction cost	Sept	610.17	293.31	127.91
	Aug	611.87	294.13	128.27
Building cost	Sept	436.24	235.82	124.01
	Aug	437.05	236.26	124.24
Volume	Aug	487	230	163
	Jul	447	182	129

OFFICIAL PROPOSALS

- **RATE: The rate for Official Proposal advertising is $1.50 per line (or fraction) set solid; and where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.**

- **CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.**
- **SEND COPY TO: Official Proposal Div. Engineering News Record 330 W. 42nd Street New York 36, N. Y.**

Bids: October 12, 1953

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time, on the 1st day of October, 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. Nickerson, District Engineer, 353 Broadway, Albany, New York				
Essex	FARC 53-120	Upper Jay Keene, S.H. 5236; Jay Upper Jay, S.H. 5235, Project F 1034(2)	0.75	Bit. Mac. Type 1 Br. Comp. I Beam 180'	$18,000 Plans $15	$333,000
Rensselaer	R.C. 53-105	Various Highways in Rensselaer County	....	Removal of 187 Trees	$900 Plans $10	16,000
		DISTRICT No. 6				
		J. H. Thomas, District Engineer, State Office Building, Hornell, New York				
Steuben	FAC 53-19 FARC 53-123	Corning City: West City Line-Chestnut St., Erie Ave. Denison Parkway Corning City: Denison Parkway Extension F.A.C. 49-4. Project U 225(8)	1.49	Asp. Conc. Ty. 2A=0.98 Mi.; Grading & Misc. Work=0.51 Mi.	$44,000 Plans $15	796,000
		DISTRICT No. 8				
		J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, New York				
Westchester	H.T. 53-11 S.T. 53-34 R.C. 53-122	New York State Thruway—Hudson Section—Subd. 10 (Tuckhoe Road Tarrytown); New England Intersch.; Ramps P, Q, J and K; Eight Misc. Secondary Roads; Ardsley Village, S.H. 1053 and Ardsley Elmsford Pt. 1, S.H. 18	6.53 (Acc.) 7.61 (Thy.)	9" Cem. Conc. Pavt. 2 @ 37' Var. Wide=7.58 Mi. 9" Unreinf. Cem. Conc. Pavt. Var. Wide=2.68 Mi. Asp. Conc. Ty. 1A, Opt.=2.32 Mi.; Grading=0.71 Mi.; T.C. Bit. Mac. P.M.=0.55 Mi.; 5 Hy. Segs. Comp. I Beam 235.5', 243.1', 362.7', 59' and 142.5'; 1 Hy. Sep. Plate Girder 109'; 3 Brs. Twin Closed Boxes 36.8', 30.2' and 32.6'	$700,000 Plans $100	12,394,000
		DISTRICT No. 10				
		M. E. Gould, District Engineer, Montauk Highway, Babylon, L. I., New York				
Bronx	FACBE 53-2	Cross Bronx Expressway Contract 9K (White Plains Rd. Zerega Ave.) Project UI 1084(18)	1.29	9" Colored Cem. Conc. Pavt. 2 @ 36' Wide=0.63 Mi. Misc. Work=0.66 Mi.; 2 Hy. Segs. R.C. Rigid Frame 91' and 87.7'; 1 Ped. Overpass Steel Girder 99'	$380,000 Plans $100	6,903,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

R. D. TALLAMY
SUPT. OF PUBLIC WORKS

Official Proposals Columns
of ENGINEERING NEWS-RECORD

are MUST reading, each week, for contractors, engineering-construction companies, equipment and materials manufacturers, all over the United States.

. . . and used regularly for over 50 years by government, state, county and municipal departments for advertising bids.

Official Proposal Division
ENGINEERING NEWS-RECORD
New York 36, N. Y.

OFFICIAL PROPOSALS

Bids: September 29, 1953

Rt. 25A(1927) Rt. 58(1953), D. L. & W. R. R. Overpass

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

Construction of a bridge to carry Route 25A (1927) Route 58 (1953), Section 3B, across the tracks of the D. L. & W. Railroad in the City of Newark, Essex County, Federal Project No. AU-187(7). The principal items of construction are:

Estimated:

782 cu. yds. Class B Concrete
77,595 lbs. Reinforcing Steel
546,000 lbs. Structural Steel
660 lin. ft. Steel "H" Piles

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, September 29, 1953, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements, and by P. L. 413, 82nd Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 309 Washington Street, Newark, New Jersey. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Ave., Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: A. Lee Grover, Chief Clerk
State Highway Department

READ THE OFFICIAL
PROPOSAL COLUMN OF
ENGINEERING NEWS-RECORD
THIS WEEK AND EVERY WEEK

OFFICIAL PROPOSALS

Bids: October 6, 1953

Contract No. 37, 37A, 37B, 37C

Sealed proposals will be received by the West Virginia Turnpike Commission for:

The work to be done under Contract No. 37 consists generally in the construction of the reinforced concrete bridge deck on the steel superstructure of the three major bridges and includes the erection of pipe railing, placing anchor bolts for lighting standards, furnishing and installing lighting conduits and pull boxes on two of the bridges and incidental construction. The Bluestone River Bridge is located at about Mile 9, near Eads Mill in Mercer County, the Fourmile Fork Bridge is located at about Mile 68, near Standard and the Kanawha River Bridge is located at about Mile 85, near Reed both in Kanawha County and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

Contract No. 37 consists of the combined quantities of Contract Nos. 37A, 37B and 37C.

The Principal Items of Work Include:

	Approximate Quantities			
	37A	37B	37C	
Concrete	1,675	1,550	2,775	Cu. Yd
Reinforcing Steel	325,000	300,000	590,000	Pounds
Erecting Pipe Railing	2,700	2,480	4,340	Lin. Ft

Proposals will be received at the office of the West Virginia Turnpike Commission, 1340 Wilson Street, Charleston 5, West Virginia until 9:00 A. M. Eastern Standard Time, and thereafter at the House of Delegates Chamber, State Capitol, Charleston, West Virginia until 10:00 A. M. Eastern Standard Time, on October 6, 1953, at which time and place said proposals will be publicly opened and read.

WEST VIRGINIA TURNPIKE COMMISSION
D. H. Morton, Chairman

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4042) will be received at Phoenix, Arizona, until October 15, 1953, for furnishing labor and materials for additions to ED2, ED4, and Buckeye Substations, Davis Dam Project, Arizona-Nevada. Location in Pinal and Maricopa Counties near Eloy and Buckeye, Arizona. Principal items are: Excavation, 500 cu. yds.; concrete, 170 cu. yds.; erecting steel structures, 71,000 lbs.; removing, transporting and re-erecting two 15-kv bus structures, lump sum; furnishing and installing rigid metal conduit, 1,100 lin. ft.; furnishing and installing 600-volt electrical conductor, 6,600 lin. ft.; installing unit type substations, lump sum; furnishing all materials for and constructing a shoe-fly, lump sum; and other work. Completion time 210 days. For particulars, address Bureau of Reclamation, Phoenix, Arizona; or Building 53, Denver Federal Center, Denver, Colorado.

W. A. DEXHEIMER, Commissioner

GOV. OF DIST. OF COL., DIR. OF HIGHWAYS, D.C., Sept. 9, 1953. SEALED PROPOSALS will be recd. in Rm. 404, 499 Pa. Ave., N.W., Wash. 1, D.C., until 2 PM, EST, Oct. 1, 1953, and then publicly opened and read for construction of a 74 ft. span across Oxon Run, S.E. The superstructure is made up of 9 prestressed concrete beams 36" wide x 39½" depth. (Fed. Aid Proj. S-66 (1). Approx. quan. of major items in structure: 25,000 cu. yds. excavation, 582 cu. yds. concrete, 66,000 lbs. reinforcing steel, 19,000 lbs. high tensile strength steel wire, 192 cu. yds. concrete in prestressed girders. Proposal forms, plans and specifications obtainable, upon deposit of a Certified Check for $25.00, payable to Collector of Taxes, D.C., from Supervisor, Contr. Sec., Procurement Office, D.C., Room 406 - 499 Pa. Ave., N.W. (Tel Na 8-6000, Ext. 2378)

Contractors Watch This Section—

for new projects. Publish your announcements through the proposal sections of *Engineering News-Record* and get their bids.

OFFICIAL PROPOSALS

Bids: October 12, 1953

Steel Work Boat

INVITATION FOR BIDS

Sealed bids for a steel work boat will be received until 5:30 P.M. October 12, 1953, by Jefferson County Drainage District No. 7. Bids will be received at the Drainage District's office, Room 317 Adams Building, Port Arthur, Texas; or may be mailed to Jefferson County Drainage District No. 7, P. O. Box 488, Port Arthur, Texas. The bids will be publicly opened and read at the said office, at the time set forth above.

Contract Documents, including Instructions to Bidders, Specifications and Bid Forms, are on file at the Drainage District's office and are available to interested manufacturers of steel work boats upon request. Bid Security, only in the form of a Certified or Cashier's Check made payable to Jefferson County Drainage District No. 7, Port Arthur, Texas, in the amount of not less than five per cent (5%) of the total bid, must accompany each bid at the time it is submitted. Bids must be submitted in triplicate and must be upon the form shown in the Contract Documents.

The right is reserved by the Drainage District as its interests may require, to accept or reject any or all bids, and to waive any informality in the bids received.

Jefferson County Drainage District No. 7
By—W. S. Taylor, Chairman

The minute you seal the envelope you seal the verdict...

NO ONE but a bidder can decide, practically, whether he, or someone else, will be the successful bidder on any contract . . . because it is you — the bidder — who decide what you will charge to do the work. No one can decide that but you. So, you actually "write your own ticket."

NATURALLY, you must deliver certain specified materials and perform definite functions, within a certain time—that much of the job is something over which you have no control. But . . . it is when you begin to plan ways and means of DOING the job that you start to win or lose it. If you can do it more quickly, with less loss of motion, and, possibly, with fewer man-hours to charge against the job—in other words, at a lower cost to you — you will have the "edge" you need to make you the successful bidder.

LOW cost operation is usually the result of a thorough knowledge of the most efficient methods—and the use of modern equipment. You will be well repaid through your reading of ENGINEERING NEWS-RECORD—both editorial and advertising.

OFFICIAL PROPOSALS

Bids: October 12, 1953

Hydraulic Dredge

INVITATION FOR BIDS

Sealed bids for hydraulic dredging equipment will be received until 5:30 P. M. of October 12, 1953, by Jefferson County Drainage District No. 7. Bids will be received at the Drainage District's office, Room 317 Adams Building, Port Arthur, Texas; or may be mailed to Jefferson County Drainage District No. 7, P. O. Box 488, Port Arthur, Texas. The bids will be publicly opened and read at the said office, at the time set forth above.

Contract Documents, including Instructions to Bidders, Specifications and Bid Forms, are on file at the Drainage District's office and are available to interested manufacturers of dredging equipment upon request. Bid security, only in the form of a certified or cashier's check made payable to Jefferson County Drainage District No. 7, Port Arthur, Texas, in the amount of not less than five per cent (5%) of the total bid, must accompany each bid at the time it is submitted. Bids must be submitted in triplicate and must be upon the form shown in the Contract Documents.

Bids are invited upon the following items:—

One—Portable ten-inch cutterhead hydraulic pipe line dredge, complete with floating discharge pipe, shore pipe, and all other accessories and appurtenances necessary to make a complete and efficient dredging plant.

The right is reserved by the Drainage District, as its interests may require, to accept or reject any or all bids, and to waive any informality in the bids received.

JEFFERSON COUNTY DRAINAGE DISTRICT NO. 7
By—W. S. Taylor, Chairman

Bids: October 12, 1953

Subcontract for Two Guard Valves

IRAQ GOVERNMENT — DEVELOPMENT BOARD.
DOKAN SCHEME.

1. Acting on behalf of the Development Board of the Government of Iraq, tenders are invited by Messrs: Binnie, Deacon & Gourley of London for a subcontract for the supply and installation of two guard valves each 2.286 metres (90") internal diameter to be installed near the outlets of two tunnels at a dam to be constructed at Dokan on the Cesser Zab river.
2. It is anticipated that the main contract for the civil engineering work will be awarded towards the end of the year 1953 and the successful tenderer will be required to enter into a contract with the Main Contractors immediately after the main civil engineering contract is signed.
3. The Contract Documents for the main civil engineering contract, which include a specification for two guard valves, and instructions to the Main Contractors for entering into a subcontract for the same, may be inspected at any of the following places, namely:—
   (a) The Offices of the Development Board, Baghdad.
   (b) The Iraqi Embassy, London.
   (c) The Iraqi Embassy, Washington.
   (d) The Royal Iraqi Legation, Paris.
   (e) The Royal Iraqi Legation, Brussels.
   (f) The Royal Iraqi Legation, Rome.
   (g) The Head Office of Messrs: Binnie, Deacon & Gourley, Artillery House, Artillery Row, London S.W. 1, England.
4. Firms desiring to tender may obtain copies of the Contract Documents for the main civil engineering contract, also copies of all amendments to the specification and drawings for the two guard valves made subsequent to the preparation of the said Contract Documents & Drawings, from Messrs: Binnie, Deacon & Gourley in London upon payment of Twenty Pounds Sterling.
5. Tenders must be written in English and must be submitted in quadruplicate to Messrs: Binnie, Deacon & Gourley of London and will be received up to noon on the twelfth day of October 1953.
6. Tenders must be accompanied by full particulars of the tenderer's facilities for undertaking the work and experience of executing work of a similar character and magnitude.

BINNIE, DEACON & GOURLEY,
Consulting Engineers,
Artillery House,
Artillery Row,
Westminster,
London. S. W. 1.

OFFICIAL PROPOSALS

Bids: October 1, 1953

Furnishing Dump Trucks

THE PORT OF NEW YORK AUTHORITY
PROPOSAL NO. 234

Sealed proposals for furnishing four (4) four wheel drive dump trucks equipped with snowplows and other equipment for delivery to various Port of New York Authority facilities will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M. (E.S.T.) Thursday, October 1, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

U. S. Government

GOV. OF DIST. OF COL., DIR. OF SAN'Y ENGRG., D.C., Sept. 8, 1953. SEALED PROPOSALS will be recd. in Rm. 404, 499 Pa. Ave., N.W., Wash. 1, D.C., until 2 PM EST, Oct. 9, 1953, and then publicly opened and read for construction of Sewage Treatment Plant Additions-Chlorination Plant-Unit 20-Structures and Equipment, Blue Plains, D.C., including all concrete, reinforc. and struc. steel, water supply system, sewer and drains, chlorine piping, plumbing, heating and ventilating, sump pumps, river water pumps, architectural work, electrical and track work, roadways and walks, painting and clean-up and all misc. work. Proposal forms, plans and specifications obtainable, upon deposit of a Certified Check for $50.00, payable to Collector of Taxes, D.C., from Supervisor, Contr. Sec., Procurement Office, D.C., Room 406 - 499 Pa. Ave., N.W. (Tel Na 8-6000, Ext. 2378)

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4040) will be received at Folsom, California, until 11:00 a.m., PST, October 14, 1953, for furnishing labor and materials for tunnel, earthwork, pipe line and structures, including terminal structure, Station 81/58 to Station 387/48.68, Camino Conduit, Sly Park Unit, American River Division, Central Valley Project. Location near Camino, California, in Eldorado County. Principal items are: 3600 cu. yds. excavation in tunnel; 81,200 cu. yds. excavation for pipe line and structures; furnishing and laying 10,000 lin. ft. 48-inch diameter concrete non-cylinder and cylinder pipe; furnishing and laying 20,000 lin. ft. 36-inch diameter concete non-cylinder and cylinder pipe; and other work. Steel pipe may be furnished in lieu of concrete pipe. Prestressed concrete cylinder pipe may be furnished in lieu of concrete cylinder pipe. The work is divided into four schedules, three of which are alternates. Completion time 500 days. For particulars, address Bureau of Reclamation, Folsom, California; or Building 53, Denver Federal Center, Denver, Colorado.

W. A. DEXHEIMER, Commissioner

OFFICIAL PROPOSAL

RATE: $1.50 per line (or fraction) per insertion.

CLOSING DATE: 10:30 p.m. Friday for issue out following Thursday.

SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

Additional Proposals on Page 99

MAKE YOUR $$$$ HAVE MORE ¢¢¢¢

The cents saved on every dollar spent may provide enough additional dollars to pay for additional work.

Advertising contracts-to-be-let for construction work, materials or equipment in the OFFICIAL PROPOSALS COLUMNS of ENGINEERING NEWS-RECORD provides intensive local, regional and national coverage of possible bidders and the opportunity to let contracts at minimum costs consistent with good work, THROUGH MORE BIDS.

Official Proposals Division

ENGINEERING NEWS-RECORD
330 W. 42nd St.
NEW YORK 36, N. Y.

OFFICIAL PROPOSALS

Commonwealth of Puerto Rico, PUERTO RICO WATER RESOURCES AUTHORITY, SAN JUAN, PUERTO RICO. Sealed proposals (Invitation No. C-28297) will be received at San Juan, Puerto Rico until October 9, 1953 for furnishing 1528 feet of 8'-0" diam. welded plate steel pipe liner consisting of approximately 134 tons of welded mild steel pipe (forty-five 16-foot pipe sections) and approximately 457 tons of welded low-alloy steel pipe (fifty 16-foot pipe sections including one reducing elbow, and one 4'-6" diam. pipe section 8 feet long) for installation at the Guayo-Prieto-Yauco Tunnel of the Southwestern Puerto Rico Project. Time of delivery is important and deliveries FAS the seaboard terminal for shipment to Puerto Rico, shall start not later than March 1, 1954. Deliveries shall be at a rate equivalent to not less than 4 pipe sections per week. Complete delivery FAS the seaboard terminal is desired within 180 calendar days after March 1, 1954. Plans, Specifications, and Contract Documents may be obtained at the Office of the Purchasing Officer, Puerto Rico Water Resources Authority, San Juan, Puerto Rico.

Bids: September 29, 1953.

Sealed proposals will be received by the West Virginia Turnpike Commission for:

Contract No. 31, 31A, 31B, 31C

The work to be done under Contract 31 comprises the paving, drainage and miscellaneous construction of approximately sixteen (16) miles of Turnpike between Mile 51.6 near the town of Mossy, Fayette County and Mile 67.6 near the town of Standard, Kanawha County, West Virginia and is in connection with the construction of the West Virginia Turnpike in the State of West Virginia.

Contract 31 consists of the combined quantities of Contract 31A, 31B and 31C.

The Principal Items of Work Include:

	Approximate Quantities 31A	31B	31C
Alternate No. 1 (Rigid Pavement)			
Select Subbase	169,960	136,060	188,130 Tons
Portland Cement Concrete	98,330	70,640	95,700 Sq. Yds.
Macadam Base Aggregate	4,200	3,880	5,300 Tons
Emulsified Asphalt	118,750	109,080	139,920 Gals.
Alternate No. 2 (Flexible Pavement)			
Select Subbase	169,880	135,960	189,020 Tons
Macadam Base Aggregate	37,150	28,080	38,320 Tons
Asphaltic Concrete Binder Course	11,240	8,120	11,010 Tons
Asphaltic Concrete Wearing Course	5,260	3,780	5,010 Tons
Emulsified Asphalt	872,510	653,570	872,080 Gals.
Other Items (Included in Both Alternates)			
Culvert Pipe and Storm Sewer	2,781	144	822 L. F.
Underdrains	7,322	2,761	3,500 L. F.
Toll Plazas	1	—	— Each

Proposals will be received at the office of the West Virginia Turnpike Commission, 1340 Wilson Street, Charleston 5, West Virginia until 9:00 A.M. Eastern Standard Time, and thereafter at the House of Delegates Chamber, State Capitol, Charleston, West Virginia until 10:00 A.M. Eastern Standard Time, on September 29, 1953, at which time and place said proposals will be publicly opened and read.

WEST VIRGINIA TURNPIKE COMMISSION
D. H. Morton, Chairman

Bids: October 2, 1953.

Construction of the New Milwaukee County Stadium

Sealed bids will be received at the office of the Milwaukee County Park Commission, Room 308, Courthouse, Milwaukee, Wisconsin, until 10:00 A.M., Friday, October 2, 1953 on the rebid for providing all labor, material, equipment, and for the construction and erection of extensions to the new Milwaukee County Stadium in accordance with the revised Proposal, plans, and specifications.

Separate bids will be taken for the General Work, (which includes piles, foundations and structural steel), Heating and Ventilating, Plumbing and Electrical.

A deposit of $25.00 shall be required for each set of plans and specifications taken from the office. The deposit shall be refunded if all plans and specifications are returned in good condition not later than ten (10) days after the opening of proposals. Plans and specifications may be obtained in the office of the Regional Planning Department, Room 303, Courthouse, after Thursday, September 3, 1953.

MILWAUKEE COUNTY PARK COMMISSION
Alfred L. Boerner, General Manager

OFFICIAL PROPOSALS

U. S. Government

ADVERTISEMENT—Sealed Bids will be received in the Office of the Engineering and Construction Director, Panama Canal Company, Balboa Heights, Canal Zone, until 10:00 A.M. EST, October 27, 1953 at which time they will be formally opened for furnishing all plant, tools, equipment, materials, labor and services and for performing all work for construction of 33 masonry type houses (66 apartments) at Diablo Heights, Canal Zone. Work includes site preparation, excavation, paving of streets, construction of sewers, street lighting system, 33 buildings, and all electrical and plumbing work. Project to be completed 255 calendar days after award. Copies of plans and specifications may be obtained from Panama Canal Company, 24 State Street, New York 4, N. Y. Requests should be accompanied by a $40.00 deposit for each set. Deposit should be in the form of a U.S. money order or a certified check made payable to "Treasurer, Panama Canal Company." Plans and specifications may be inspected at the following places: Panama Canal Company, 101 Indiana Ave., N. W., Washington 25, D. C.; Panama Canal Company, 24 State Street, New York 4, New York; Office of the District Engineer, U. S. Engineer's Office, 1709 Jackson Street, Omaha 2, Nebraska; Office of the District Engineer, U. S. Engineer's Office, 180 New Montgomery Street, San Francisco 19, California; Office of the District Engineer, U. S. Engineer's Office, Foot of Prytania Street, New Orleans, Louisiana; Office of the District Engineer, U. S. Engineer's Office, 751 S. Figueroa Street, Los Angeles, California; Office of the Division Engineer, U. S. Engineer's Office, Southwestern Division, 1114 Commerce Street, Dallas, Texas; Office of the District Engineer, U. S. Engineer's Office, 4735 Marginal Way, Seattle 4, Washington; Office of the District Engineer, U. S. Engineer's Office, P. O. Box 1538, Albuquerque, New Mexico.

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED: MAN for engineering promotion in eastern paving field, college graduate preferably with state highway experience, who likes competitive effort. Good salary and opportunity for promotion. Write full details. P-9056, Engineering News-Record.

UNUSUAL OPPORTUNITY — Building Construction Sales Engineer. To contact industrial firms for design and construction with engineering or architectural background. Fine opportunity for advancement if capable. P-9042, Engineering News-Record.

ENGINEER WITH training and experience in Sanitary field. Excellent opportunities in United States or Latin America with small but long established firm having Profit Sharing Plan. P-9030, Engineering News-Record.

EXPERIENCED CHECKERS wanted for work on structural and miscellaneous steel. In application give experience record, salary requirements and date available for work. Carolina Steel & Iron Co., Greensboro, N. C.

WANTED—SEWER Foreman. Experienced, long term job, Newark, N. J. area. Reply to P-9106, Engineering News-Record.

EXPERIENCED ESTIMATOR and Chief Engineer between the ages of 35 and 45, to make quantity take-offs, help price, buy, expedite and do some field supervision. All our work is competitive. We specialize in industrial, commercial and public works. Only experienced and high-grade men need apply. Permanent job for right man. Excellent salary and bonus. Office located in Ohio. Send qualifications, experience and photograph if available. P-9112, Engineering News-Record.

WANTED: STEEL erection superintendent for structural and reinforcing steel jobs, including bridges. Salary commensurate with ability. Must furnish references. Halloran Construction Co., 1 Washington Avenue, Providence, R. I.

ENGINEER (MECHANICAL or Chemical) — Well established fertilizer company in Midwest needs the services of a young man to help with planning the transition from old type manufacturing to modern and chemical equipment. Some experience in the fertilizer or chemical field would be advantageous but most of all, we need a man with drive, initiative and imagination. This is a permanent position with a growing industry and results will be well recognized. State experience and starting salary. P-9162, Engineering News-Record.

ENGINEER FOR inspection, control and sales assistance in concrete products plant. State experience, salary expected. P-9173, Engineering News-Record.

(Continued on the following page)

SENIOR FIELD ENGINEERS

Electrical *Civil* *Mechanical*

Graduate engineers with responsible field experience on steam power plants or related heavy industrial projects. Require experience in directing the mechanical, electrical or civil-structural phase of a major construction project.

Please write giving complete qualifications, references and salary requirements. Your reply will be confidential.

BECHTEL CORPORATION
220 Bush Street
San Francisco California

MECHANICAL ENGINEER

With general building contractor. Excellent opportunity and permanent position with young aggressive company operating throughout the south. Must be capable of estimating and analyzing subbids received from mechanical and electrical subcontractors and supervise and expedite work after subcontract award. Write full particulars, including education, experience, personal details, and salary requirements, to:

Blount Brothers Construction Company
Post Office Box 1144
MONTGOMERY, ALABAMA

CIVIL ENGINEERS

Work on hydro-electric power developments. Write giving full experience record, qualifications and salary desired.

HARZA ENGINEERING COMPANY
400 West Madison St., Chicago 6, Illinois

WANTED
EXPERIENCED CHIEF ESTIMATOR

Must have ability and be capable of directing Estimating Dept. of Building Contractor's Office in New York City.

P-9050, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
(Not available for equipment advertising)
$1.50 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY WANTED undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.50 a line an insertion.

INFORMATION:
BOX NUMBERS count as 1 line additional in undisplayed ads.
DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).
EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:
The advertising rate is $17.10 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

Send NEW ADVERTISEMENTS: To New York City Office, 330 W. 42nd St., N. Y. 36 for October 1st issue closing September 21st

ESTIMATORS

Fully experienced in industrial and commercial buildings and mechanical installations (machinery, equipment, piping, etc.)

These openings in Cleveland Office offer excellent working conditions with paid vacations, sick leave and participating group insurance program. Presently working scheduled 5 day 45 hour work week.

Replies will be treated confidential and arrangements will be made to interview selected applicants. Please submit complete resume stating experience, education, salary required and date available to

THE H. K. FERGUSON COMPANY
Engineers and Builders
Ferguson Building Cleveland 14, Ohio

BRIDGE - HIGHWAY ENGINEERS DESIGNERS - DRAFTSMEN

For work on major bridges, expressways, and turnpikes. Permanent positions with periodic promotions depending on experience and ability. Paid vacations, sick leave, hospitalization and life insurance. Include experience, salary requirement in first letter. Photograph optional.

Howard, Needles, Tammen & Bergendoff
Consulting Engineers
1805 Grand Ave., Kansas City 8, Mo.

SALES MANAGER

Well known machinery manufacturer offers unusual opportunity if your experience includes improving and developing a field sales force and distributor organization in the Construction Equipment field. Send full particulars covering education, experience, etc. to

P-9046, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

CHIEF MECHANICAL INSPECTOR

Mechanical Engineer preferred, with broad background in mechanical installation and operation. Must have responsible experience as Inspector of mechanical installations on large industrial projects. Central station steam power plant experience desirable.

Bechtel Corporation
220 Bush Street San Francisco, California

ESTIMATORS

Young engineers capable of mechanical estimating for construction of refineries, steam power and similar industrial projects. Must have some field experience.

Considerable weight given to ambition, intelligence and interest in estimating and cost analysis.

BECHTEL CORPORATION
220 Bush Street
San Francisco, California

SALES ENGINEER

Large engineering firm has large opportunity for producer and worker who has successfully sold engineer-architect services, and has established contacts with industrial and public works. Will operate from Southeast Office.

SW-9044, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS VACANT
(Continued from preceding page)

STRUCTURAL ENGINEER—Estimator, 30-40, with leading New England steel fabricator. Should be engineering graduate, with experience in design and fabrication of steel and other metals. Registered professional engineer preferred. Excellent opportunity leading to a top xecutive position. Salary open. Location: Southern New England. P-9140, Engineering News-Record.

EMPLOYMENT SERVICE

SALARIED PERSONNEL, $3,000-$25,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

SELLING OPPORTUNITIES OFFERED

SALES ENGINEERS—Albany, New York and Pittsburgh, Pennsylvania with established national concern selling prefabricated metal products to engineering and construction markets. Position offered is permanent and presents excellent future with aggressive, progressive and expanding organization. Engineering degree desirable. Previous sales experience unnecessary. Age 24 to 30. SD-8254, Engineering News-Record.

PRESTRESSED CONCRETE Structural Design Engineer representatives with established regional contracts required to obtain engineering contracts for leading firm of Prestressing Consultants. Many territories open. Write RW-9026, Engineering News-Record.

POSITIONS WANTED

CONSTRUCTION SUPERINTENDENT. Twenty-two years experience in industrial building, equipment installations and heavy construction. Engineering education. Know costs and Accounting procedures. Fifty years of age, married, no children. Seventeen years continuous employment with one Industrial Building Contractor. Available now. PW-9053, Engineering News-Record.

POSITIONS WANTED

ENGINEER, REG. P.E. Reports investigations, settlement of contractors' claims. 45 years experience. Design, construction. Turnpikes, tunnels, buildings, foundations, etc. PW-8746, Engineering News-Record.

PROJECT MANAGER or General Superintendent desires connection with construction company doing foreign or domestic work. Broad experience heavy construction, organization, reorganization, administration and over-all management. Large well trained following. Highest references. Available September 15. PW-9000, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT: concrete pipe manufacture. Considerable experience. PW-9156, Engineering News-Record.

PROJECT ENGINEER—Age 40, M.C.E., P.E., 19 years experience in office and field on bridges, dams, tunnels, waterfront structures, heavy foundations, airfields. PW-9170, Engineering News-Record.

CONST. ENGR. Supt. Completing refinery construction contract Middle East. Desires contacts leading to foreign contract. 15 years heavy construction. Spanish, Arabic. PW-9155, Engineering News-Record.

CIVIL ENGINEER, 33 years old, married, children, desires position with small steel erector. Has nine years experience in steel erection with large steel company. Worked in office and field on all types of steel construction. PW-9154, Engineering News-Record.

PROJECT MANAGER—Resident Engineer 27 years diversified chemical & industrial experiences, including, design—estimates—schedules—reports and field project administration. Capable organizer with required capacity to assume complete responsibilities for coordinating all project activities. Available 30 days. PW-9135, Engineering News-Record.

(Continued on the opposite page)

LATIN-AMERICAN ENGINEERING FIRM

Founded 1946 Specializing in Soil Design, Testing and Supervision Would be Interested in Doing ENGINEERING, TESTING AND LIAISON WORK FOR AMERICAN CONTRACTORS WORKING ON SPANISH BASES. Good Knowledge of Spain. Fluent English. Familiar with American Engineering Way. Readily Available Reference in the States. Member ASCE, ASTM, AWWA, HRB.

RA-9142, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

Project Superintendent or Engineer

Desires a position with the following to offer: 18 years experience in the construction of highways, heavy waterfront work, industrial projects and military installations, both U. S. and foreign. Speaks Spanish and will travel foreign with family.

PW-9134, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. *Forty-third year. Write today.*
WILSON Engineering Corp.
College House Offices—HARVARD SQUARE, CAMBRIDGE, MASS.

Engineers—Foremen—Office Men
Learn latest methods to organize and run work. Prepare for the top jobs.
Send post card for details.
GEO. E. DEATHERAGE & SON
CONSTRUCTION CONSULTANTS
411 So. 5th Ave. Lake Worth, Florida

POSITIONS WANTED

(Continued from opposite page)

CIVIL ENGINEER, B.S. in C.E., P.E. New York State, age 31, 7 yrs. experience design of steel & concrete buildings, plant sewers, roadways & RR tracks for industrial plants. Desire position affording opportunity for progressively increasing scope & responsibility with possible business participation. PW-9133, Engineering News-Record.

ENGINEER—BROAD executive experience, employed at present, capable of full charge directing engineer, administrative and craft personnel on complex projects including many government installations, power houses, industrial plants etc. Especially interested in job site and construction procedure planning, coordination of work activities, material procurement and control, economical utilization of manpower and equipment in connection with supervision of construction together with installation of mechanical and electrical equipment. PW-9132, Engineering News-Record.

SALES ENGINEER—structural designer, 33, eight years steel, concrete and pressure vessel experience seeks sales engineering position offering opportunity. Northeastern States. Will train. PW-9152, Engineering News-Record.

GEOLOGIST, SINGLE, 29, with PH.D. and varied experience, capable in soils, foundation, water, oil, and ores work. Desires permanent or temporary overseas position of any nature in Asia or Canada. May consider domestic jobs. PW-8994, Engineering News-Record.

CONSTRUCTION ENGINEER C.E. Graduate age 53 long successful administrative experience all phases large scale general construction and industrial chemical in field and office. Employed seeks new connection, top references. PW-8928, Engineering News-Record.

GENERAL SUPT. 25 years diversified heavy construction experience. Capable of assuming full responsibility on large job. Good background, know men and equipment. Good references. Available any location immediately. PW-9062, Engineering News-Record.

GRADUATE CIVIL Engineer desires position in Industrial Expansion Program. 5 years field and office experience as both a contractors' engineer and owners Resident Engineer on large industrial construction projects. PW-9105, Engineering News-Record.

ARCHITECTURAL STRUCTURAL Engineer experienced in industrial and commercial design, field-supervision and estimating desires position with Architects, Engineers, or Constructors. PW-8850, Engineering News-Record.

CONSTRUCTION EXECUTIVE, proven record: Project Manager; Chief Estimator; Office and Field Executive. General Contracting. Available at an early date. PW-9118, Engineering News-Record .

CONSTRUCTION ENGINEER, age 36, graduate C.E. with varied experience, desires permanent connection with general contractor. Tidewater Virginia preferred location. PW-9116, Engineering News-Record.

REAL ESTATE Appraiser, with architectural and building contracting background, 24 years experience, graduate recognized university, degree, licensed. PW-8560, Engineering News-Record.

ENGINEER PARTNER *Wanted*
Engineering organization located in Houston, Texas, needs partner to supervise mill construction in Central and South America. Must be engineer with construction experience. Capital required $18,000—Give full details and experience in first letter.
BO-9175, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

SETTLED
Commercial and Industrial Concrete Floors and Airport Runways Raised and Stabilized by Hydraulic Pressure.
15 yrs. experience
LEE AND COMPANY
4545 De Tonty St. Louis 10, Mo.
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SALE
160-S Pumpcrete Machine
Serial #CZ 397 used plus 330 feet straight 7" pipe and numerous fittings.
Price complete $5,500.00
F.O.B. our shop—L.I.C., New York
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$113.00 OFF
SCHRAMM MODEL 35 CFM
AIR COMPRESSORS
Completely Factory Rebuilt
Fully Guaranteed—Subj. to Prior Sale
PEECO,
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FOR SALE
Used Murphy Diesel Engine
Model ME6, side hood doors, steel skid base, Electric starter, batteries, enclosed clutch, fuel tank, water cooled oil, large capacity oil filter, and 14½" O.D., seven groove V-Belt pulley. Excellent condition $1,750.00
J. P. FOSTER CO.
Aberdeen, South Dakota

WANTED

WANTED
WHIRLEY CRANE
Must handle about 6 to 8 tons at 120-foot radius and have traveling mechanism. With or without gantry. Electric power.
State manufacturer's model number, boom length, track gauge, age, location for inspection and price.
E. J. ALBRECHT COMPANY
CONTRACTORS
2626 W. 26th Street
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WANT BUY 200 TPH TO 300 TPH
Portable Crushing & Screening Plant
or 2—100 TPH to 150 TPH CAP.
JOSEPH C. SEALY
1004 SALEM AVE. HILLSIDE, N. J.

FOR SALE
2—Marion 33-M ¾ yd. Shovels, Backhoe & Crane Boom 50', Air Operated, Extra Wide Cats. In Excellent Condition.
1—37.5 K.V.A. Generator driven by Buda diesel Model DTG, 30 K.W., 127-220 volts 98.5 amps, continuous duty. Used very little.
OLE HANSEN & SONS, INC.
PLEASANTVILLE, N. J.

For Sale:
One Model "SD" Blaw-Knox Concrete spreader 20/25' adjustable wheel drive with vibratory attachment. Moving trucks for spreader and vibratory equipped with S/F and flat tread rubber wheels.
This is a new machine, delivered last January 19, 1953 and is a complete job. The machine can be seen at the new Parr-Franconia Warehouse, Franconia, Virginia.
Phone: Overlook 3-5767
Selling Price Subject to Prior Sale $8,500.00
Address all inquiries to
Barrett and Hilp,
Attention:
Mr. Lloyd J. Brown,
R.F.D. #1, Springfield, Virginia

1 Browning Loc. crane in perf. cond.	$7500.00
1 Sullivan 210 Comp. late mod.	2500.00
1 Smith tilting 28S mixer Comp.	1800.00
2 CMC tilting saw tables each	275.00
1 CMC 20 H.P. S dr. hoist	550.00
1 Thomas 2 dr. hoist 50 H.P. motor	550.00
1 Am. S dr. hoist 52 H.P. motor	550.00
1 C.H.E. S dr. hoist 5 H.P. motor	225.00
3 G.E. 20 H.P. motors 220/440 3 ph. 60 cy. ea.	150.00
4 Herman Nelson heaters elec. & gas ea.	125.00
2 Littleford hot water boosters ea.	150.00
1 9B2 McK-Terry pile hammer	1500.00

CHAS. H. HOGAN
4536 Colfax Avenue S.
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USED DIRECT OIL BURNING SPACE HEATERS
Excellent condition for heating warehouses and factories; complete with motors, fans, burners and controls. Having 500,000 and 750,000 BTU Capacities. Write or call Mr. Brand of—
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WHAYNE SUPPLY COMPANY
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FOR SALE OR FOR RENT
WILL CONSIDER RENTAL PURCHASE

6 CATERPILLAR SCRAPERS NO. 80—Top Extensions—17½ yds. Struck. Tires, good to new.

6 D8 CATERPILLAR TRACTORS—All excellent and above 2U16000 Series, 900 to 1500 Hours.

3 D8 Tractors—Rebuilt this Spring—2U8000 Series.

3 D8 Tractors—Just completely rebuilt High 8R Series. All of these tractors were bought new by us and maintained and rebuilt by experts.

10 EUCLIDS—Bottom Dumps 13—17 Yd. All identical 43FDT. Only four weeks use since rebuilt to pass U. S. Army Corps of Engineers Inspection as 85% New.

5 EUCLIDS—Bottom Dumps 13—17 Yd. 43FDT. 3 and 2 Identical. Rebuilt same as above.

4 EUCLIDS—End Dumps—All Identical. Rebuilt same as above.

5 EUCLIDS—End Dumps—Good Mechanically. Ready for work.

1 NO. 6 NORTHWEST SHOVEL & CRANE COMB. LIKE NEW.

1 80D N/W SHOVEL. Engine & Machine just rebuilt. Guaranteed A-1. Serial 8724.

6 EUCLID SCRAPERS 17—20 Yd. 275 HP Engines. Less than one year old. All Completely checked and repaired where needed by factory representatives.

2 HD-20 TRACTORS with Push Blocks and Power Control Units. Bought new last fall with above machines. Never used except as pushers.

1 TRUCK CRANE 22B (New) GM Diesel Engine Crane & Dragline with Buckets.

1 EUCLID LOADER 5BV just rebuilt by Euclid Distributor throughout.

ALL LOCATED IN NEW YORK STATE

A. L. DOUGHERTY CO.

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FOR SALE

New and Used material—Immediate delivery from stock Angles, Channels, I and WF Beams, especially for Contractors needs

H BEAMS PILE SECTIONS

60 pcs	12"	B P S	53#	60'
16 "	12"	B P S	74#	75'
16 "	10"	B P S	57#	67' 6"

Phone or Wire your steel requirements

We are also interested in purchasing your surplus material.
We assure you our prices will be the best obtainable.

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CYpress 9-5440

SURPLUS EQUIPMENT
FOR SALE OR RENT
With Option to Purchase
Rebuilt—A1 Condition

1 48B Bucyrus Erie Shovel 2 cy diesel
1 Model 6 N.W. Shovel 1½ cy diesel
1 Caterpillar D8 Bulldozer
1 New Shovel Front for Model 6 N.W.
1 Used Shovel Front for Model 25 N.W.

WILLIAMS CONSTRUCTION COMPANY
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FOR IMMEDIATE SALE

Industrial Steel Sash, ventilating type, glazed. Like New.

6—24 Lt. (6 Lts. wide—4 Lts. high)—6'x6'
60—20 Lt. (5 Lts. wide—4 Lts. high)—5'x6'
60—16 Lt. (4 Lts. wide—4 Lts. high)—4'x6'
*30—30 Lt. (5 Lts. wide—6 Lts. high)—5'x9'
*30—24 Lt. (4 Lts. wide—6 Lts. high)—4'x9'

In excellent condition
All lites 12" wide x 18" high
*Have wire guards
.90 cents per lite, glazed

CUYAHOGA WRECKING CO.
12645 Greenfield Rd., Detroit 27, Michigan
Vermont 8-1055

LOCOMOTIVE, DIESEL ELECTRIC: 65 ton, 0-4-4-0. Sale or rent.

COMPRESSOR: Chicago Pneumatic O.C.E., 26" x 15" x 18", synchronous motor 400 H.P. 2300 volt, capacity 2200 CFM. Chicago Pneumatic OCE, 1300 CFM, 230 H.P., 2300 volts, 3 phase, 60 cycles.

ROD MILL: Marcy 8 x 12', center peripheral discharge, with motor and drive. NEW condition.

BALL MILL: 10' x 11' with 700 H.P., 180 RPM, synchronous motor. NEW.

CLASSIFIERS: 6—Akins and Wemco 54" x 34' and 78" x 28½ ft., Simplex, single screw, weir type, with syncrogear motors, 220/440 volt, with lifting device. Condition like NEW, availabel now. Three located Nevada.

AIR SEPARATORS: Bradley 16 ft. and Sturtevant 10 ft., with or without motors.

BOOT BUCKET ELEVATORS: Buckets size 12" x 7", 40 ft. center to center, with motors and drives.

CLAM SHELL BUCKET: Blaw Knox size 7250, 2½ yd. capacity, new condition.

LOCOMOTIVE CRANE: Link Belt 25 ton capacity, standard R. R. gauge, gasoline powered, cast steel trucks, air brakes, with or without 1¼ yd. Williams clam shell bucket, thoroughly modern, excellent condition. Located Minnesota.

HOISTS: Single and double drum shaft and slope Hoists 100 H.P. to 1500 H.P., complete with all electrical equipment, with or without head frames.

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IF YOU HAVE A JOB TO DO
IF YOU NEED EQUIPMENT TO DO IT.
IF YOU WANT TO KEEP YOUR EQUIPMENT INVESTMENT TO A MINIMUM.

THIS USED EQUIPMENT SHOULD BE OF INTEREST TO YOU.

BUCYRUS ERIE 38B Combination Shovel Crane Backhoe. Powered by Cat. D13,000 Diesel. Shovel Front never used.
This Machine NEW Jan., 1953. Worked only 300 hrs.

GRADALL MOD. 2400. New 1947.
Good Operating Condition.

EUCLID 9BV LOADER powered by General Motors diesel. Hitch for HD 20 tractor. New belt and spare parts included. This machine is in near new condition having moved less than 350,000 cy. material: Current price of this machine delivered in New Jersey with new belt is approximately $36,128.00.
If you need a loader it will pay you to inspect this one!

CATERPILLAR D6 with Caterpillar Hydraulic Angledozer & Fleco Rootrake, 74" gauge, electric starter, 9U series.
Excellent Condition.

P & H DRAGLINE MODEL 255A (1948) 35 boom, powered by Waukashaw Gasoline Engine. This machine recently rebuilt.
Excellent Condition

ALLIS CHALMERS HD 20G 4 c.y. front end loader. New 1952.
Good Operating Condition.

4 WOOLDRIDGE TERRA COBRAS with 200 H.P. Cummins diesel engines: Fuller 2A112 transmissions—*all latest steering changeovers!* 24:00 x 24-24 ply tires in 80% condition.
Excellent Cond.

ALLIS CHALMERS HD 19 with Carco cable bulldozer and front mounted winch.
Rebuilt Guaranteed.

BEYERS model 83C ¾ cy. SHOVEL BACKHOE with Buda model K428 motor.
Good Condition.

CATERPILLAR MODEL 12. Motor Patrol with Scarifier, low hours since overhaul, good rubber.
Very Good Condition.

NORTHWEST 25 SHOVEL CRANE, 30' Crane Boom, GM Diesel, New 1946.
Operated less than 200 hrs. since overhaul.

JOY 105 COMPRESSOR used very little.
Good Condition.

GALION 101 MOTOR GRADER with International Diesel; 12' blade and Scarafier.
A Good Buy.

2 GAR WOOD model 524 SCRAPERS front tires 18:00 x 24; rear tires 24:00 x 29. These machines are in good condition.

ALLIS CHALMERS model D MOTOR GRADER with A-C gasoline engine.
Rebuilt and Guaranteed.

INTERNATIONAL TD9 with Bucyrus Erie Angledozer.
Good Condition but needs motor overhaul.

GALION TRENCH ROLLER with Wisconsin gas engine and hydraulic steering.
Near New Condition.

REX PUMPCRETE model 200 W. Double cylinder; agitator hopper with separate gasoline engine drive—mounted on top of machine. Several hundred feet 8" pipe & all fittings necessary to go right to work included.
Excellent condition, used on one small job.

THIS EQUIPMENT ISN'T DOING EITHER OF US ANY GOOD STANDING IN OUR YARD. LET'S GET TOGETHER AND TALK PRICES.

Subject to Prior Sale or Other Disposition

For complete list contact JOHN A. HUNTER

FRANTZ EQUIPMENT CO.

Philadelphia, Pa.	Lancaster, Pa.
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Rebuilt Current Models
For Sale or Rent
CONCRETE EQUIPMENT COMPANY
312 E. Wisconsin Ave.
Milwaukee 2, Wis.

FOR RENT
3—Brand New
Manitowoc 3000B Cranes
with 2 yd shovel fronts
DICK CONSTRUCTION COMPANY
Large, Penna. (Pgh. District) Elizabeth 1290

FOR SALE
CONTRACTOR SELLING OUT
ALL EQUIPMENT

Koehring Shovel 1¼ Yd. Cat Diesel New 1951 $35,000.00
Marion Shovel ¾ Yard Crane & Backhoe G. M. Diesel extra large tracks new 1948.....$17,000.00
Lorain Shovel ¾ Yd. and Backhoe Cat Diesel new 1950 .....$17,000.00
Unit ⅜ Yard Crane new 1951.....$7,000.00
2—Unit ½ Yard Backhoes, Diesel.....$8,500.00
H. D. 20 with Pusher block 17 Yard La Plante Choate wagon, Used 400 hrs.....$28,000.00
H. D. 19, new motor, new tracks, angleblade $10,000.00
3 Garwood Carryalls 11 Yards.....$3,500.00
H. D. 9 Angleblade. Used 4 months.....$9,000.00
5 H. D. 14 Bulldozers with blades $3,500.00 to $6,500.00
Cat D. 6 Angleblade new 1951.....$7,500.00
Grader Cat #12. Like new.....$7,500.00
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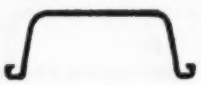

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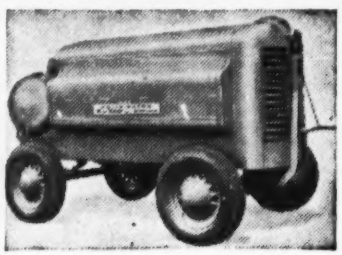

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THE RING-TITE COUPLING, unlike the older Simplex, maintains the gasket rings in their proper place throughout the installation. Frequent checking with feelers after the joint has been made is thereby eliminated.

JM beats a problem

New Transite pressure coupling successful in field installation

Except for a few workmen sporting bruised knuckles and torn fingernails, it was generally agreed that the Simplex coupling furnished a good pressure joint for Transit pipe.

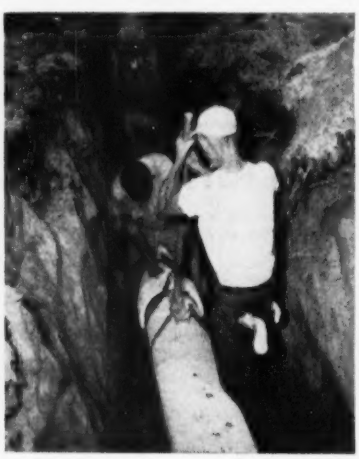
However, Johns-Manville engineers have developed an improved coupling that is said to link pipe sections in one-third less time than the old type and without the necessity of frequent checking during installation.

The new Ring-Tite coupling consists of a Transite sleeve containing two rubber ring gaskets retained in grooves on the inside walls of the sleeve. When the coupling is placed, the gaskets are lubricated with a soap-glycerine-water mixture, and one-half of the coupling is slid over the pipe end. The coupling is secured in place by a jack that grips the inside of the pipe while pressure is applied to the end face of the coupling. The other pipe end is then inserted into the coupling and forced tight.

Early this year the Ring-Tite coupling was used on a 17,600-ft line bringing water into Mattapoisett, Mass. Original plans called for the new joints on the first 1,500 ft and the older Simplex on the remainder.

• **Trouble at the outset**—The line of Transite and Ring-tite hadn't been

APPROVED TECHNIQUE requires installation of the coupling in one pipe length before it is lowered into trench.



SECOND HALF of the installation is made by forcing a second pipe length into the coupling with a lever pull.

COMPLETED JOINT is very similar to the Simplex, but ring gaskets are sure to be in the right place.

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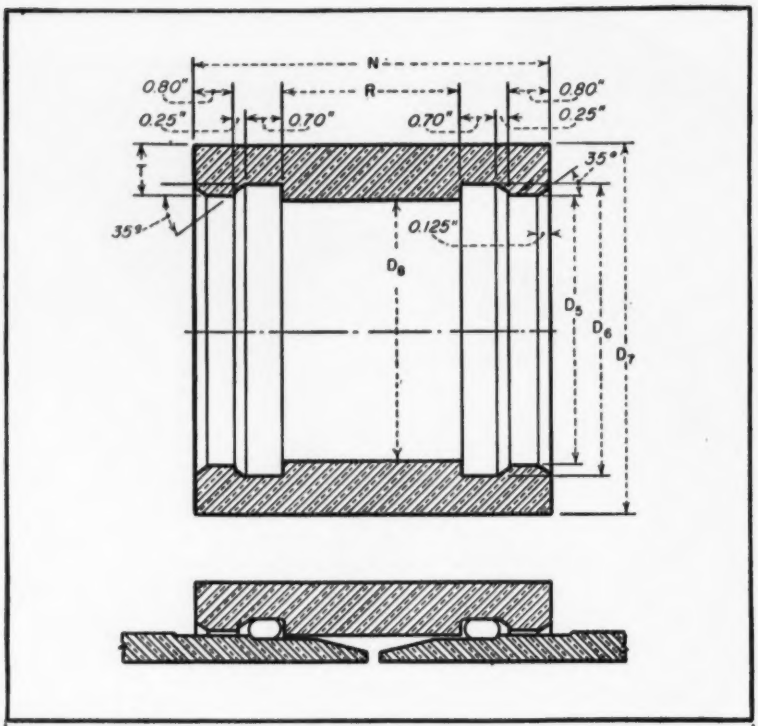

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10	11.97	12.40	14.31	11.80	7.00	3.50	1.17
12	14.23	14.66	16.87	14.06	8.00	4.50	1.32

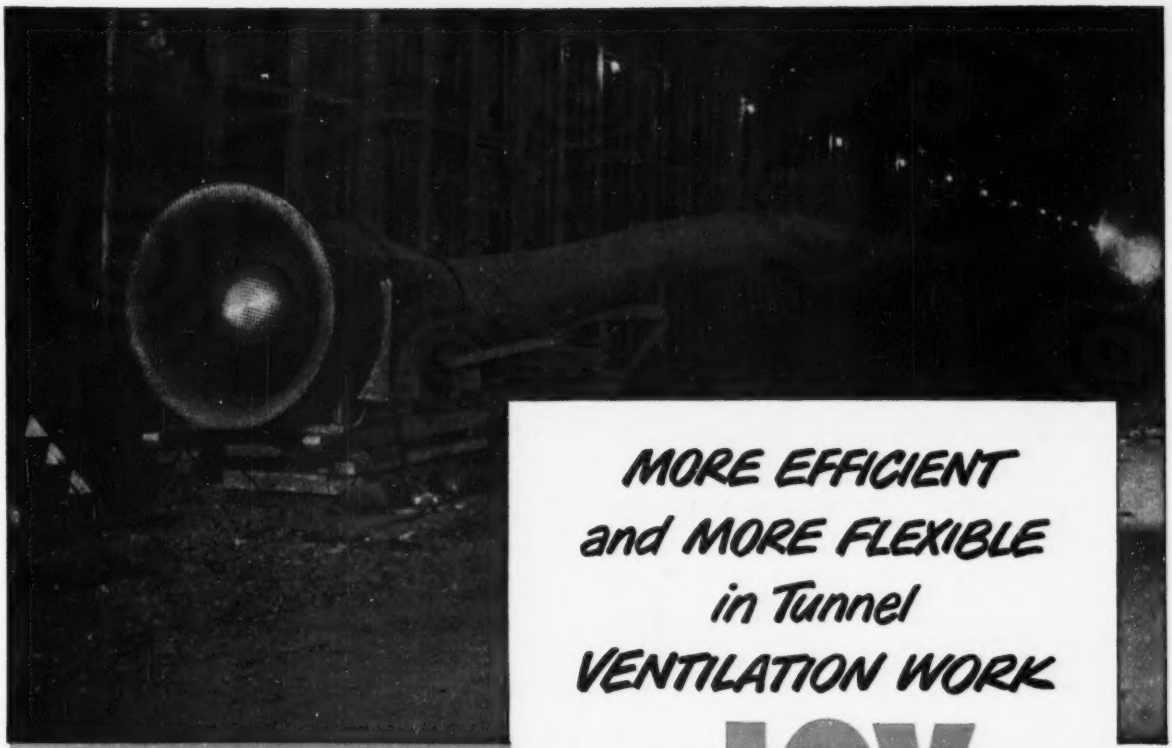
CROSS SECTIONAL VIEW indicates gasket retaining grooves. Before modification dimension D8 equaled D5 (all dimensions are in inches).

strung more than a hundred feet when the first difficulties were met. The lubricant was designed specifically to be soluble in water so as not to leave any unwanted after effects once the installation was completed and flushed. However, the technique of lubrication and fitting proved slightly less than effective in the boggy conditions encountered a short distance from the line's point of origin. The lubricant washed away and the rubber gaskets rolled out of their retaining grooves.

(*Continued on page 114*)

ORIGINAL installation of coupling is made above ground.

FORCE FIT is obtained with screw jack that grips inside pipe walls.



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Any possibility of attaining a tight joint was thereby destroyed.

• **Quick solution**—J-M experts in cooperation with the contractor, the A. E. Bragger Construction Co. of Greenwood, R. I., attacked the problem in two ways. At the time the method of joining required the full assembly of the joint in the trench. This was changed to the method prescribed now of installing the coupling on one length of the pipe above ground and completing the assembly in the trench. Maintaining lubrication on the exposed gasket proved no problem after this since the assembly time in the wet conditions was halved.

The second half of the solution required increasing the effective depth of the gasket retaining grooves. This was done by increasing the sleeve wall thickness in the area between the grooves. This curtails the escape of the gaskets since the reduced space between the inside wall of the coupling and the outside diameter of the pipe will not admit the thick rubber gasket ring readily.

The redesigned and improved coupling was used on an 1,800-ft section in the same line, making a total of 3,300 ft connected with Ring-Tite. The line was tested at 225 psi and found satisfactory.

Leakage was only three percent of the allowable and even this amount was attributed to valves and fittings rather than to the couplings. A slight weepage was noted around the joints but this cleared up within two to three hours after the installation was complete.

This first installation of Ring-Tite was checked assiduously to be sure that the gaskets were seating properly. It was soon found that this constant inspection was unnecessary since the joints sealed themselves perfectly the first time. In all respects the new, redesigned coupling was termed a complete success. Johns-Manville Sales Corp., Industrial Products Div., 22 E. 40th St., New York 16, N. Y.

Koehring gives crane capacity a lift

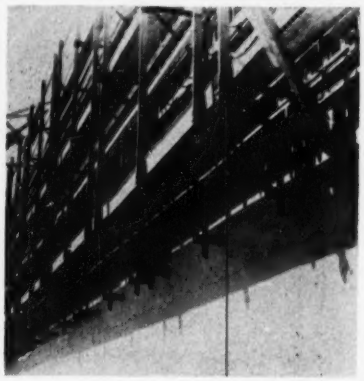
By shifting the upper machinery, Koehring has been able to boost the lift capacity of its model 205 excavator from 7¾ to 10 tons. Besides being moved further back, behind the excavator's center of rotation, the upper machinery has a simplified arrangement involving only two horizontal shafts, simplifying maintenance.

Further maintenance simplifications are said to be realized with adjustable hook rollers. The four individual hook and turntable rollers are mounted on nonmetallic bushings—each adjustable for wear by a simple eccentric.

Self-energizing brakes on the new half-yard are engaged automatically and reportedly require no adjustment for the life of the brake lining. These brakes are said to eliminate the possibility of the machine "running away" and can be released only by tractive power applied by the operator with a single jaw clutch lever.

Otherwise, all of the standard features of the company's crawler-mounted shovel units are continued in the new model. The Koehring Co., 3026 W. Concordia Ave., Milwaukee 16, Wis.

COUNTERWEIGHTING by design rather than weight addition boosts capacity.



Firmer scaffolding claimed with waler jack

Double hooks on this waler jack are said to provide an unshakable grip while distributing the load on the waler and making sidesway impossible.

As soon as the jacks are placed, the planking can be laid. Several layers of scaffolding can be connected by a single guard rail post, thereby tying in a number of walers also. When the jack is used on a bottom waler, a 2 x 4 is slipped into the pocket at the bottom to hold the scaffold away from the wall.

The jacks also may be bolted directly to the wall by swinging the double hooks out of the way, or they may be bolted to a stud by removing the hooks. Holes are predrilled in the jack for both applications. Superior Scaffolding Co., 5624 Bankfield Ave., Culver City, Calif.

New two-way mobile radios feature reduced power drain

New 30 and 60-watt two-way mobile radios with appreciably reduced primary power requirements have been added to the Motorola line. The manufacturer states that a newly developed all-vibrator power supply attains 70 per cent power conversion efficiency compared to conventional 55 per cent efficiencies. The improved power supply combined with other power economies is said to produce an overall drain reduction of almost 50 per cent.

Another feature of the new sets is their interchangeable use in six and twelve-volt vehicles without revision of internal wiring. All power conversion is accomplished automatically in the external cabling and connectors.

30-watt models are designated T41G series and measures 6 in. high 9⅞ in. wide and 18¼ in. long. The T51G series or 60-watt models are 6¼ x 15⅜ x 20¼ in. overall. All oper-

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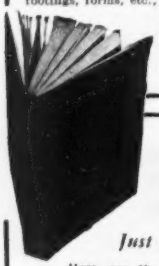

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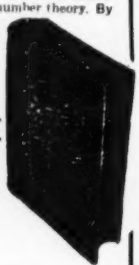

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Wood cones on snap ties assure positive break backs

The Strip-Easy snap tie for concrete form work has been designed with wooden cones to give greater strength and to ease tie removal before stripping.

The snap tie has hot forged ends said to increase strength and provide greater safety, and it incorporates a newly designed washer that is reported to provide additional bearing on the form and reduces grout seepage.

Descriptive material and a sample tie are available on request. UNIVERSAL FORM CLAMP CO., 1238 N. KOSTNER AVE., CHICAGO 51, ILL.

Nickel-cadmium batteries have indefinite life

Hermetically sealed nickel-cadmium cells offer the promise of indefinite life—without maintenance of any kind.

The new cells have been undergoing tests by the Navy Department for several months as a possible solution to acid spillage and gas generation problems in military aircraft and have been found to be superior to conventional cells in many ways.

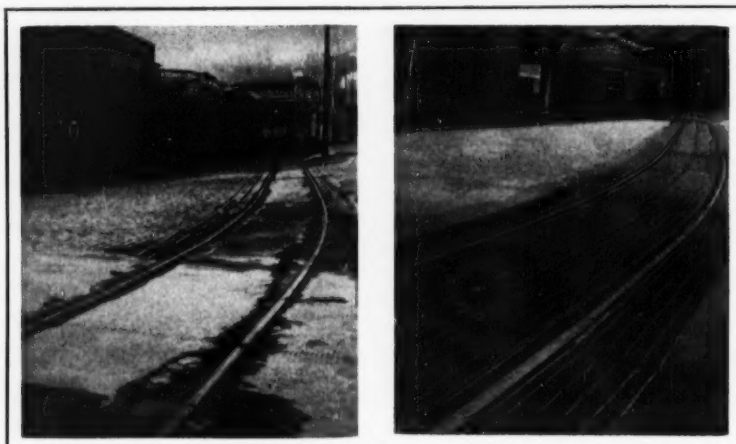
Since the cells are hermetically sealed there is no need to check fluid level and therefore a major cause of battery failure is eliminated. This feature is of particular value on rental equipment in the construction field where dry batteries are more of a rule than an exception. In addition, the batteries can be made smaller than conventional units to save space and simplify location of equipment power sources.

As of now the new cell is commercially available, but the price is prohibitive when compared with conventional batteries—several times as much in fact. This of course is a serious drawback to the use of the cells on private vehicles, but in industrial fields where batteries may be considered an investment, the lasting quality of the battery may outweigh the high initial cost. COGENEL INC., 230 PARK AVE., NEW YORK, 17, N. Y.

Mercury vapor street light features hot start cutout

With a new mercury vapor street lighting systems, protection against hot starts is assured by a time delay relay that automatically retards starting of the lamps after a power failure. The cutout feature and delay functions when voltage dips more than 50 per cent.

The system, called Uni-Ballast, has been designed to operate mercury vapor lamps without individual ballasts and yield high power factor, high efficiency and good regulator load factor. According to the manufacturer, initial installations have demonstrated 95 per cent power factor, 94 per cent efficiency and 100 per cent load fac-



BESIDES IMPROVING THE ROAD for traffic, removable grating permits tamping around ties and allows air and sunshine to dry up moisture that would otherwise cause rotting. The crossing is designed for H-20 loading—maximum weight of 20 tons. Blaw-Knox Co., Grating Dept., Farmers Bank Bldg., Pittsburgh 30, Penna.

tor. In addition, no starting difficulties were reported at low temperature.

Installation costs are reduced by the elimination of individual ballasts and housing. Savings of 50 per cent on the installation of a 25-lamp circuit are claimed.

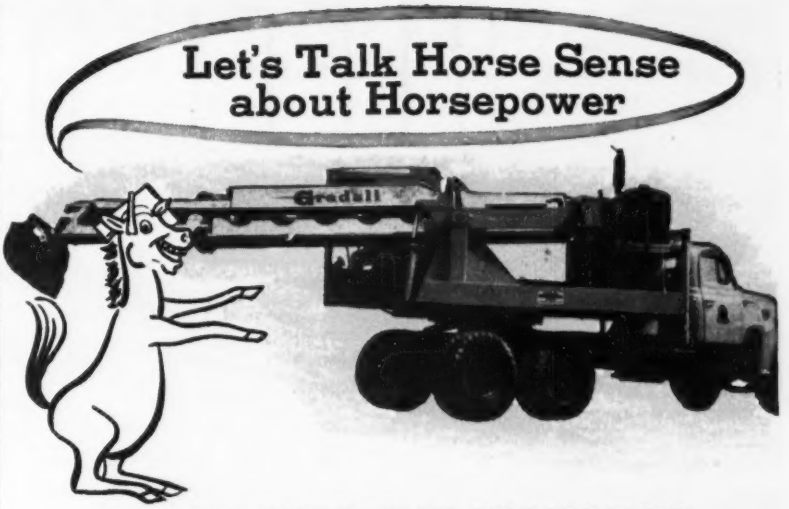
The nucleus of the system is a 10-kw, 2400-v Arctroller that combines the functions of a regulator and a ballast. In addition, the system consists of the time delay relay, a remote control oil switch and time clock control. All components are mounted at one substation to minimize the number of control points. LINE MATERIAL CO., 700 W. MICHIGAN ST., MILWAUKEE 1, WIS.

New Products briefs . . .

• **Electric drill**—A ¼-in. electric drill with no-load speed of 2,500 rpm is announced by the U. S. Electrical Tool Division of Emerson Electric Manufacturing Co., 8100 Florissant Avenue, St. Louis 21, Mo. Designed for continuous duty, the drill features ball-bearing construction, aluminum alloy frame, heat-treated alloy steel gear, jacobs 3-jaw geared chuck and universal motor.

• **Ball detent hydraulic valve**—A new hydraulic four-way valve with ball detents to hold the valve piston in any given position is being offered by Rivett Lathe & Grinder, Inc., Brighton 35, Boston, Massachusetts. The locking action of the new detent reportedly permits the valve to be mounted vertically as well as horizontally and prevents vibration from causing movement of the valve piston. The valve is available with one, two or three ball detents: with one detent the valve piston is held in center position; with two detents the valve piston is held in either end position; with three detents the valve piston is held in both end and center positions. Designed for 1,500 psi application, the valves are offered in three different types of operation: threaded stem, lever and knob; in seven sizes from ¼ in. to 1½ in. and in five piston designs.

• **Latex base paint**—Made with a special latex base and intended for interiors in new construction, Professional Ultra-Flat Latex Paint is produced by The Glidden Co., Berea Road and Madison Avenue, Cleveland, Ohio. The special base is said to result in improved covering and sealing qualities that make a single coat sufficient for most interiors. The paint is reported to dry to an absolute flat finish in about half an hour.



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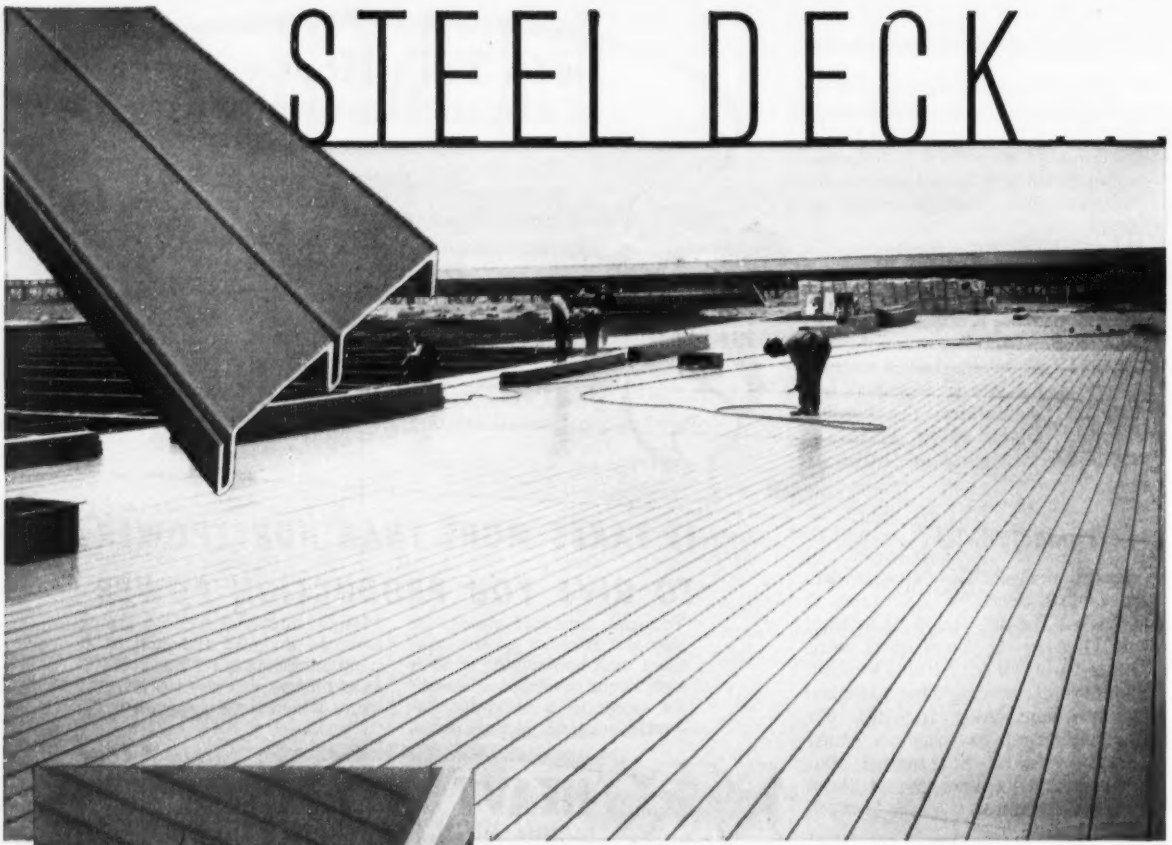

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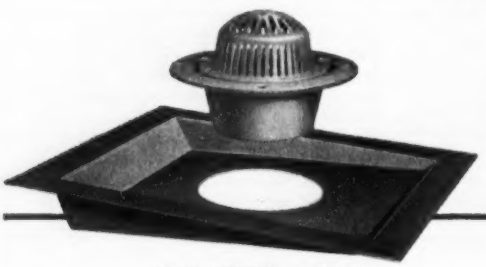

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PUBLICATIONS

Structural aluminum—How to avoid beam failure in torsion and in compression is explained in Reynolds Metals Technical Advisors Nos. 21 and 22. No. 21 includes details on how weight savings can be effected by choosing aluminum structural parts with the same strength and rigidity as wood and steel. No. 22 outlines how to design aluminum beams subjected to bending stresses. REYNOLDS METALS CO., 2500 S. THIRD ST., LOUISVILLE, KY.

Wooden school buildings—Engineering progress with wood in school building construction is detailed by Harry W. Bolin, Los Angeles engineer, in a new publication "School Buildings Your Tax Dollars Can Afford", is available from the TIMBER ENGINEERING CO., 1319-18TH ST., N. W., WAASHINGTON 6, D. C.

Diesel engines—A new 48-page booklet gives detailed description of engineering design features to look for in diesel engines. In addition, ratings and descriptions of Murphy diesel models are presented. Nineteen pages of photographs of typical installations are aso shown. MURPHY DIESEL CO., 5317 W. BURNHAM ST., MILWAUKEE 14, WIS.

Street lighting—"A Planned Street Lighting Program for Your Town" is the title of an interesting 26-pager that proclaims its purpose to be to consolidate all the information necessary for those responsible for preparing a street lighting programs. WESTINGHOUSE ELECTRIC CORP., LIGHTING DIV., EDGEWATER PK., CLEVELAND, OHIO.

Air compressors—A new bulletin describes the Model 160 and 210 Super Chief portable compressors. The literature contains specifications and illustrations of 2-wheel, 4-wheel and skid units. Various component parts are also described. Bulletin E-252. DAVEY COMPRESSOR CO., KENT, OHIO.

Package water conditioning plant—Permutit's package water conditioning plant is described and illustrated in a new 8-page bulletin, No. 3869. It lists the component parts of the complete water conditioner, details the principles of operation, gives ratings, capacities and sizes and illustrates some typical installations. THE PERMUTIT CO., 330 WEST 42ND ST., NEW YORK 36, N. Y.

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EDITORIALS

Part toll, part free

RUNNING A TOLL HIGHWAY through the central part of a city so that it can serve as a local traffic artery as well as a through route—as is being done or is proposed at several points in this country—is an interesting development. It appears to mark the first step toward making more effective use of toll roads as part of the nation's highway system.

Such a plan is being put into effect in Buffalo, N. Y., in connection with the construction of New York State's Thruway system (ENR March 19, p. 41) and is proposed for Richmond, Va. (ENR July 30, p. 22). In a modified form it is to be applied where New Jersey's Garden State Parkway passes through Essex County, a populous suburban area now lacking adequate north-south highway facilities, and at Manchester, N. H., on a new toll highway being built by the state. In each instance, access to lanes of the toll facility will not be controlled by toll gates, and use of those lanes will be free within a zone limited by barrier-type toll gates across the parkway.

Such free use of part of a toll highway is not new. It is a modification of the system applied to the toll parkways in Westchester County, New York, and in Connecticut where tolls are collected at barrier-type toll gates set up at intervals along each parkway rather than at all access points, thus permitting free use of the parkway by local people whose points of access and egress lie between toll barriers.

Under that system of toll collection, however, only a few people get free use of any part of the toll highway. Under this newer development, a large volume of traffic will move over what, presumably, are some of the more costly parts of the new facilities without payment of a toll.

Take the Buffalo situation as an example. There the Niagara Thruway, which is a branch of the state thruway system, is to run right into the central part of the city. Thus it will form two of the new arteries called for in the city's plan for improved access to the central business district, one to the east toward the main stem of the thruway system and one north toward Niagara Falls. This branch of the thruway system that serves Niagara Falls could have bypassed Buffalo to the north, but if it had, the city still would have had to build the two new traffic arteries within its own limits, and it would not have had as good connections with the main stem of the cross-state thruway.

Use of the Niagara Thruway as part of Buffalo's arterial highway system was proposed when the thruway was being planned as a free road. It still will be a free road in so far as most of the traffic in the city of Buffalo is concerned. The barrier toll gate to the east will be at the city line, and to the north along the Niagara River it will be about halfway to the line.

Where the thruway from the east enters the metropolitan area, its width is increased from four lanes, divided, to six lanes; and for about a mile in the heart of the city, the width is to be further increased to eight lanes to provide for both local and through traffic.

Obviously, the success of such plans for integrating toll and free highway systems will depend on the volume of traffic seeking to use the new highway within the limits of any city where such a highway is designed to serve a dual purpose. Too much local traffic could cut down the capacity of the highway to the point where the through traveller would not be getting the service he paid for at the toll gate. Nevertheless, so long as resort to toll financing appears to be the only way to get badly needed added highway capacity in some areas, this plan is preferable to one in which the toll facility is not treated as part of an integrated highway system designed to provide the maximum amount of service at the lowest cost.

And, of course, when local traffic does reach a volume that impedes through traffic seriously, a bypass route for through traffic still can be built. Such an arrangement already is in the planning at Buffalo for the Niagara Thruway.

Obviously, what is being done to make these toll facilities more useful to the communities through which they pass is no different, basically, from what has been done in many metropolitan areas with freeways and other through highways of the limited-access type. What gives these instances significance is evidence of a trend away from the "closed" type of toll road on which a fee is charged for any use; also the fact that planning for toll highways at last is beginning to be integrated with free-road planning.

Getting more out of research

THE UNDESIRABLE GAP separating basic and applied research from design and construction practice in all fields of engineering practice was all too evident at the international convention of hydraulic researchers at Minneapolis, reported on p. 25 of last week's issue. At that meeting—mostly—researchers were talking to researchers. Relatively few of the engineers who stand to profit from the information exchanged were on hand.

Of course, most of the information will reach them eventually. ENR's coverage of the meeting was intended to hasten that day. But much could be done to cut the time by which practice lags behind the labs.

Each group involved could do its part. Practicing engineers ought to look with less awe on basic research, and should seek out and take quicker advantage of sound applied-research findings. Researchers, for their part, should make more widely available—and more readily understandable—the immediate significance of what they do.

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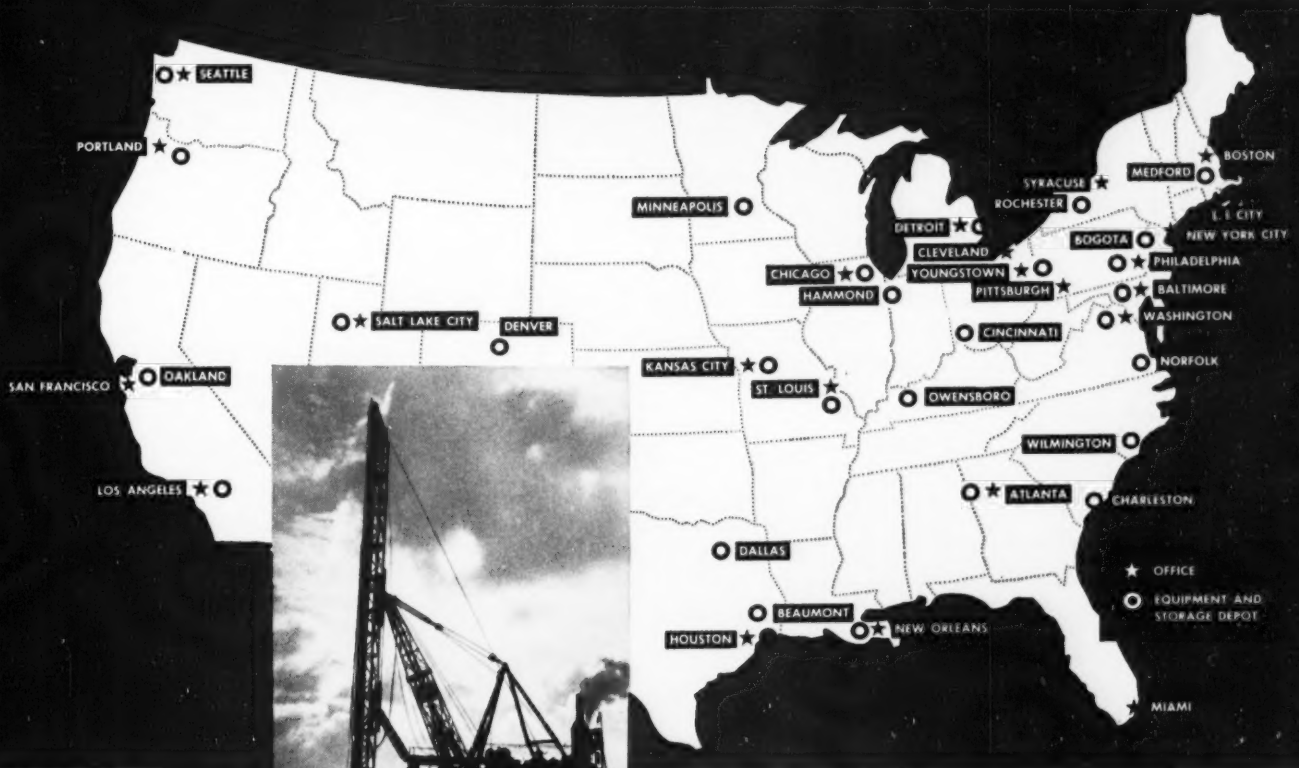

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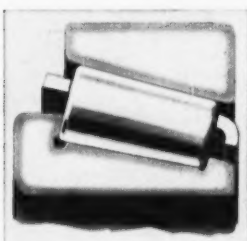
This symbol on a product means its bearings are the best.

To keep its Rex 5½-yard Adjusta-Wate Moto-Mixer on the job—day in, day out—**CHAIN BELT COMPANY** mounts vital parts on Timken tapered roller bearings.



HARD ON THE OUTSIDE, TOUGH ON THE INSIDE

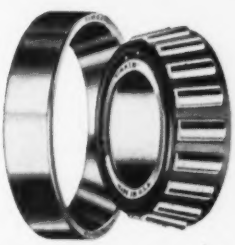
Rollers and races of Timken bearings are case-carburized to give a hard, wear-resisting surface and a tough, shock-resisting core. Result: longer bearing life.

The Timken Company leads in: 1. advanced design; 2. precision manufacture; 3. rigid quality control; 4. special analysis Timken steels.

TIMKEN

TRADE-MARK REG. U. S. PAT. OFF.

TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▱ BEARING TAKES RADIAL ↓ AND THRUST →◎← LOADS OR ANY COMBINATION ✳